Determination: Contamination?, soil and groundwater sampling

PA/VSI Or RFA FILE REVIEW CHECKLIST

Facility Name: General Motors Corporation (Lansing Operations)

EPA ID: MID 005 356 894____ City: 920 Townsend St. Lansing, Ingham Co._ State: MI___

Name of Reviewer: Maureen McHugh_____ Date of Review: 8/14/08_____

1	Yes	No*	Is this a one folder site?
2	Yes	No	Are there Superfund files for this site?
3	Yes	No	Did you Read the Executive Summary?
			There are: __22__ SWMUs and ___1__ AOCs at this site.
4	Yes	No	Did you review the regulatory history?
5	Yes	No	Does the facility have interim status or a permit?
			This facility is a: ____ SQG, __X___ LQG, or ____ Less than 90 day.
6	Yes	No	Was the Facility closed per RCRA? RCRAinfo 380 (1998)
			If Yes, was the closure: __X__ CC, or _____ CIP.
7	Yes	No	Are there documented (historical) releases? Briefly describe on Page 2.
8	Yes	No	Were there releases identified during the inspection? Briefly describe on Page 2.
9	Yes	No	Do you agree with the Conclusions and Recommendations?
			If No, briefly describe on Page 2.

As a result of your review of the PA/VSI or RFA file, please classify this site as:

_____ No further corrective action recommended or warranted: These are sites that closed the regulated units and any other SWMUs or AOCs at the site did not warrant any further corrective action (no historic releases or evidence of releases observed during the Visual Site Inspection).

___X__Further Action Required: Soil or sediment sampling or groundwater sampling or monitoring or any type of investigation that was recommended in the report in response to a documented or observed release at any SWMU or AOC and where such investigation, whether being addressed during the inspection or after, does not have the necessary documentation in the facility record files.

_____ More Information Needed: There is no RFA, PA/VSI or RCRA closure information available.

PA/VSI Or RFA FILE REVIEW CHECKLIST

Notes

In MI's WDS database, this site is listed as undergoing voluntary CA effective 7/1/2008

Briefly describe any documented (historical) releases for any SWMU or AOC recorded in the report. For each release, please identify the SWMU or AOC and a one or two line description of release.

-In 1988, a leak was detected in an UST (SWMU8). Soil samples indicated the presence of xylene (60-400mg/kg), methyl ethyl ketone (64-100mg/kg), toluene (7-390mg/kg), and ethylbenzene (4-45mg/kg).
-A 1990 investigation revealed groundwater and soil contamination in the area of eight Facility Rank Farms (AOC1) and (SWMU3, 15, 16). BTEX was detected at 1 to >100mg/kg, TPH at 71,000mg/kg, total lead at 1 to 130mg/kg, barium at 5.9-81mg/kg, selenium at a4mg/kg, and chromium at 3.4-28mg/kg. VOCs at .7-15mg/kg were detected at the tank 45 tank farm and less than 1mg/kg at the central tank farm. Perched groundwater sample analysis indicated BTEX compounds at 1 to 100mg/L, TPH up to 46mg/L, and other VOCs at .022-12mg/L. 1in of free petroleum products was observed at the top of the uppermost bedrock aquifer.
-A 1992 investigation revealed the presence of VOCs, and metals in the soil and groundwater.

Briefly describe any releases observed during the inspection for any SWMU or AOC recorded in the report. For each release, please identify the SWMU or AOC and a one or two line description of release.

PA/VSI Recommendations

Determine if a release occurred at the waste oil treatment system (SWMU1). Determine the extent of contamination at the waste oil tank (SWMU3). Conduct soil and groundwater sampling to determine if contamination is present at building 90 fluid fill (SWMU6) and the former tank 65 (SWMU7). Determine the extent of contamination at former tank 8 (SWMU8), outdoor scrap metal bins (SWMU15), outdoor scrap metal bin USTs (SWMU16). Advance additional soil borings and install monitoring wells to determine the extent of soil and groundwater contamination. Sample groundwater for BTEX, TPH, VOCs, and metals.

Looked up in MI's Part 201 Site List and its status is: Interim Response in progress. It scored 25/48 in 2004.

U.S. Environmental Protection Agency
Office of Waste Programs Enforcement
Contract No. 68-W9-0006

TES 9

Technical Enforcement Support at Hazardous Waste Sites Zone III Regions 5,6, and 7

PRC
PRC Environmental Management, Inc.

PRC Environmental Management, Inc.
233 North Michigan Avenue
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Chicago, IL 60601
312-856-8700
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PRELIMINARY ASSESSMENT/ VISUAL SITE INSPECTION

BUICK-OLDSMOBILE-CADILLAC GROUP A DIVISION OF GENERAL MOTORS CORPORATION (FORMERLY GMC PLANT 1) LANSING, MICHIGAN MID 005 356 894

FINAL REPORT

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Waste Programs Enforcement
Washington, DC 20460

Work Assignment No.	:	C05087
EPA Region	:	5
Site No.	:	MID 005 356 894
Date Prepared	:	November 23, 1992
Contract No.	:	68-W9-0006
PRC No.	:	009-C05087MI2U
Prepared by	:	PRC Environmental Management, Inc. (Gabrielle Norkis)
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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

EXECUTIVE SUMMARY

PRC Environmental Management, Inc. (PRC), performed a preliminary assessment and visual site inspection (PA/VSI) to identify and assess the existence and likelihood of releases from solid waste management units (SWMU) and other areas of concern (AOC) at the Buick-Oldsmobile-Cadillac Group (BOC), a division of General Motors Corporation (formerly GMC Plant 1) facility in Lansing, Michigan. This summary highlights the results of the PA/VSI and the potential for releases of hazardous wastes or hazardous constituents from SWMUs and AOCs identified. In addition, a completed U.S. Environmental Protection Agency (EPA) Preliminary Assessment Form (EPA Form 2070-12) is included in Attachment A to assist in prioritization of Resource Conservation and Recovery Act (RCRA) facilities for corrective action.

The BOC facility manufactures parts for and assembles the following automobiles: (1) the Pontiac Grand Am, and (2) the Oldsmobile Achieva. The facility has operated at its current location since 1902. From 1902 until 1908, Oldsmobile Motor Works operated the facility. In 1908, Oldsmobile Motor Works became part of the General Motors Corporation. In January 1984, General Motors Corporation reorganized its North American passenger car operations into the two following areas: (1) the Buick-Oldsmobile-Cadillac Group, and (2) the Oldsmobile Division. During 1990 and 1991, General Motors Corporation reorganized its operations into the three following areas: (1) the Buick-Oldsmobile-Cadillac Group, (2) the Powertrain Division, and (3) the Oldsmobile Division.

Currently, the facility occupies about 190 acres and employs approximately 8,625 people working 3 shifts, 7 days per week. The facility conducts the following operations: (1) machining 6-cylinder engines; (2) manufacturing automobile front ends (fascias), bumpers, and gasoline tanks; (3) remanufacturing 8-cylinder engines; (4) repairing pumps and valves; (5) painting automobile fascias, bumpers, and engine parts; (6) testing engines; (7) assembling hoods, gasoline tanks, 6-cylinder engines, and 2 styles of automobiles. From about 1962 until about 1984 the facility conducted zinc phosphating operations. From about 1980 until about 1989 the facility also conducted plastic molding operations.

The facility most likely conducted additional manufacturing activities since 1902, but due to time restraints, the age of the facility, and the size of past and current operations facility representatives were unable to provide a comprehensive facility history during the VSI.

The BOC facility generates wastewater sludge, waste oil, waste paint (D001, D007, F003, F005), nonhazardous paint sludge, paint thinner (D001, D007, F003, F005), hazardous (D008) and nonhazardous baghouse dust, asbestos, adhesive waste (D001), waste solvents (D001, D007, F003,

F005), waste gasoline (D001, D018), and waste brake fluid (D001, D018). From about 1962 until about 1984, the facility generated wastewater filter cake (F001). From about 1980 until about 1989, the facility generated solid sheet molding compound (SMC) waste resin (D001, D006, D008, D009).

The facility's RCRA regulatory status is that of a generator of hazardous waste and a treatment/storage/disposal facility.

The PA/VSI identified the following 22 SWMUs and 1 AOC at the facility:

Solid Waste Management Units

1. Waste Oil Treatment System
2. Waste Oil Drip Pans
3. Waste Oil Tank
4. Waste Etna Oil Collection Pits
5. 300-Gallon Assembly Line Tank
6. Building 90 Fluid Fill
7. Former Tank 65
8. Former Tank 8
9. Wastewater Treatment System
10. Fascia 3,000-Gallon Paint Waste Thinner Tank
11. Bumper, Fascia, and Touch-Up Waste Paint Sludge Treatment Units
12. Paint Roll-Off Sludge Dumpster
13. Dust Collectors
14. Building 22 Roll-Off Dumpster
15. Outdoor Scrap Metal Bin
16. Outdoor Scrap Metal Bin Underground Storage Tanks (USTs)
17. Asbestos Dumpster
18. Rapid Reinforced Reaction Injection Molding (RRRIM) Trenches
19. Hazardous Waste Storage Area
20. Former Phosphating Operations Wastewater Treatment System
21. Satellite Accumulation Areas (SAAs)
22. Bumper 300-Gallon Waste Paint Thinner Tank

Areas of Concern

1. Facility Tank Farms

The potential for release to ground water, surface water, and on-site soils from SWMUs 2, 4, 5, 9, 10, 11, 13, 14, 18, 20, 21, and 22 is low because the units are or were indoors, and a spill would not be likely to leave the building and migrate outdoors. The potential for release to the air from these SWMUs is low because wastes are or were stored in closed tanks or containers at all times. Wastes in SWMUs 2, 4, 13, 14, 18, and 20 do or did not contain volatile organic compounds (VOCs). The potential for release to ground water, surface water, air, and on-site soils from SWMUs 12, 17, and 18 is low because the wastes managed are kept closed at all times.

SWMU 1 consists of two aboveground areas and one underground area. The probability of release to ground water, surface water, and on-site soils from the aboveground portions of the unit is low because they are located indoors, and a spill would not be likely to leave the building and migrate outdoors. The probability of a release to air from the aboveground portions of the unit is low because the wastes managed do not contain volatile organic compounds. The potential of a release to ground water and on-site soils from the tank portions of the unit that are currently and were formerly located underground between the two buildings is moderate to high because the tanks are or were underground with no monitoring devices. These tanks are most likely more than 15 years old and their integrity has not been assessed because they are located underground. The potential for release to surface water is low to moderate. Limited data based on regional geology and preliminary sampling suggests that ground-water flow is north away from the Grand River. However, surface topography and depth of ground water is in a south-southeasterly direction and perched ground water may be in communication with the river. A release would have to migrate about 800 feet south or east via ground water to the Grand River. The potential for release to the air is low because the tanks are underground and did not contain volatile organic compounds.

The potential for release to ground water and on-site soils from SWMUs 6 and 7, is moderate because they are or were located underground with no monitoring devices. These tanks are most likely more than 15 years old and their integrity has not been assessed because they are located underground. The potential for release to air is low because the units are or were located underground. The potential for release to surface water is low to moderate because a release would have to migrate about 1/2 mile south via ground water to the Grand River.

The potential for release to on-site soils and ground water from SWMUs 3, 8, 15, and 16 is high. A 1991 Interim Site Report revealed VOC and metal contamination in the soil and ground water in the area of these four SWMUs. The potential for release to air is low because the tanks are underground. The potential for release to surface water is low to moderate because a release would have to migrate about 1/2 mile south via ground water to the Grand River.

Volatile organic compound and metal contamination has been documented to ground water and on-site soils from the Facility Tank Farms (AOC 1). The potential for a release to surface water is low to moderate because a release would have to migrate about 1/2 mile south via ground water to the Grand River. The potential for release to air is low because the units are located underground.

The facility is completely fenced. The nearest residence is about 50 feet west of the facility. The nearest surface water body, the Grand River, borders the facility on the south and

the east. Other surface water bodies in the area include the Red Cedar River located approximately 2 miles east of the facility.

Ground water is used as a source of drinking water. Two municipal wells are located east of the Grand River, about 3,300 feet east of the plant, upgradient of the facility.

Wetlands are located about 3 miles northwest of the facility. Moores Park is located along the Grand River and is directly south of the facility. The Carl G. Fenner Arboretum and Scott Woods Park are located about 2 miles southeast of the facility. Riverside Park is located about 1/2 mile west of the facility. Washington Park is located about 1 mile south of the facility. Frances Park and Grand River Park are located about 1 mile west of the facility. According to the information obtained at the time of the VSI and from the U.S. Geological Survey topographic map, no habitat or endangered species and no other sensitive environments are located within 2 miles of the facility.

PRC recommends additional investigation to determine the extent of soil and ground-water contamination for the underground portion of SWMU 1, and for SWMUs 3, 8, 15, 16, and AOC 1. Once determined, any required remediation of contaminated areas should be conducted. Soil and ground-water sampling should be conducted to determine if contamination is present at SWMUs 6 and 7. If present, the extent of contamination should be determined, followed by remediation of contaminated areas. PRC recommends no further action for SWMUs 2, 4, and 5; SWMUs 9 through 14; and SWMUs 17 through 22.

1.0 INTRODUCTION

PRC Environmental Management, Inc. (PRC), received Work Assignment No. C05087 from the U.S. Environmental Protection Agency (EPA) under Contract No. 68-W9-0006 (TES 9) to conduct preliminary assessments (PA) and visual site inspections (VSI) of hazardous waste treatment and storage facilities in Region 5.

As part of the EPA Region 5 Environmental Priorities Initiative, the RCRA and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) programs are working together to identify and address RCRA facilities that have a high priority for corrective action using applicable RCRA and CERCLA authorities. The PA/VSI is the first step in the process of prioritizing facilities for corrective action. Through the PA/VSI process, enough information is obtained to characterize a facility's actual or potential releases to the environment from solid waste management units (SWMU) and areas of concern (AOC).

A SWMU is defined as any discernible unit at a RCRA facility in which solid wastes have been placed and from which hazardous constituents might migrate, regardless of whether the unit was intended to manage solid or hazardous waste.

The SWMU definition includes the following:

- RCRA-regulated units, such as container storage areas, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, and underground injection wells
- Closed and abandoned units
- Recycling units, wastewater treatment units, and other units that EPA has generally exempted from standards applicable to hazardous waste management units
- Areas contaminated by routine and systematic releases of wastes or hazardous constituents. Such areas might include a wood preservative drippage area, a loading-unloading area, or an area where solvent used to wash large parts has continually dripped onto soils.

An AOC is defined as any area where a release to the environment of hazardous waste or constituents has occurred or is suspected to have occurred on a nonroutine and nonsystematic basis. This includes any area where such a release in the future is judged to be a strong possibility.

The purpose of the PA is as follows:

- Identify SWMUs and AOCs at the facility
- Obtain information on the operational history of the facility
- Obtain information on releases from any units at the facility
- Identify data gaps and other informational needs to be filled during the VSI

The PA generally includes review of all relevant documents and files located at state offices and at the EPA Region 5 office in Chicago.

The purpose of the VSI is as follows:

- Identify SWMUs and AOCs not discovered during the PA
- Identify releases not discovered during the PA
- Provide a specific description of the environmental setting
- Provide information on release pathways and the potential for releases to each medium
- Confirm information obtained during the PA regarding operations, SWMUs, AOCs, and releases

The VSI includes interviewing appropriate facility staff, inspecting the entire facility to identify all SWMUs and AOCs, photographing all visible SWMUs, identifying evidence of releases, initially identifying potential sampling parameters and locations, if needed, and obtaining all information necessary to complete the PA/VSI report.

This report documents the results of a PA/VSI of the Buick-Oldsmobile-Cadillac Group (BOC) facility in Lansing, Michigan. The facility was formerly known as GMC Plant 1, a division of General Motors Corporation. The PA was completed on February 9, 1992. PRC gathered and reviewed information from the Michigan Department of Natural Resources (MDNR) and from EPA Region 5 RCRA files. PRC also reviewed relevant documentation from the U.S. Department of Agriculture (USDA), United States Geological Survey (USGS), Federal Emergency Management Agency (FEMA), and U.S. Department of Commerce (DOC). The VSI was conducted on February 11 and 12, 1992. It included interviews with facility representatives and a walk-through inspection of the facility. Twenty-two SWMUs and one AOC were identified at the facility.

PRC completed EPA Form 2070-12 using information gathered during the PA/VSI. This form is included in Attachment A. The VSI is summarized and 27 inspection photographs are included in Attachment B. Field notes from the VSI are included in Attachment C. A list of facility air permits is included in Attachment D.

2.0 FACILITY DESCRIPTION

This section describes the facility's location, past and present operations (including waste management practices), waste generating processes, history of documented releases, regulatory history, environmental setting, and receptors.

2.1 FACILITY LOCATION

The BOC facility is located at 920 Townsend Street in Lansing, Ingham County, Michigan (latitude 42°43'19"N and 84°33'58"W), as shown in Figure 1. The facility occupies 190 acres in a mixed use area.

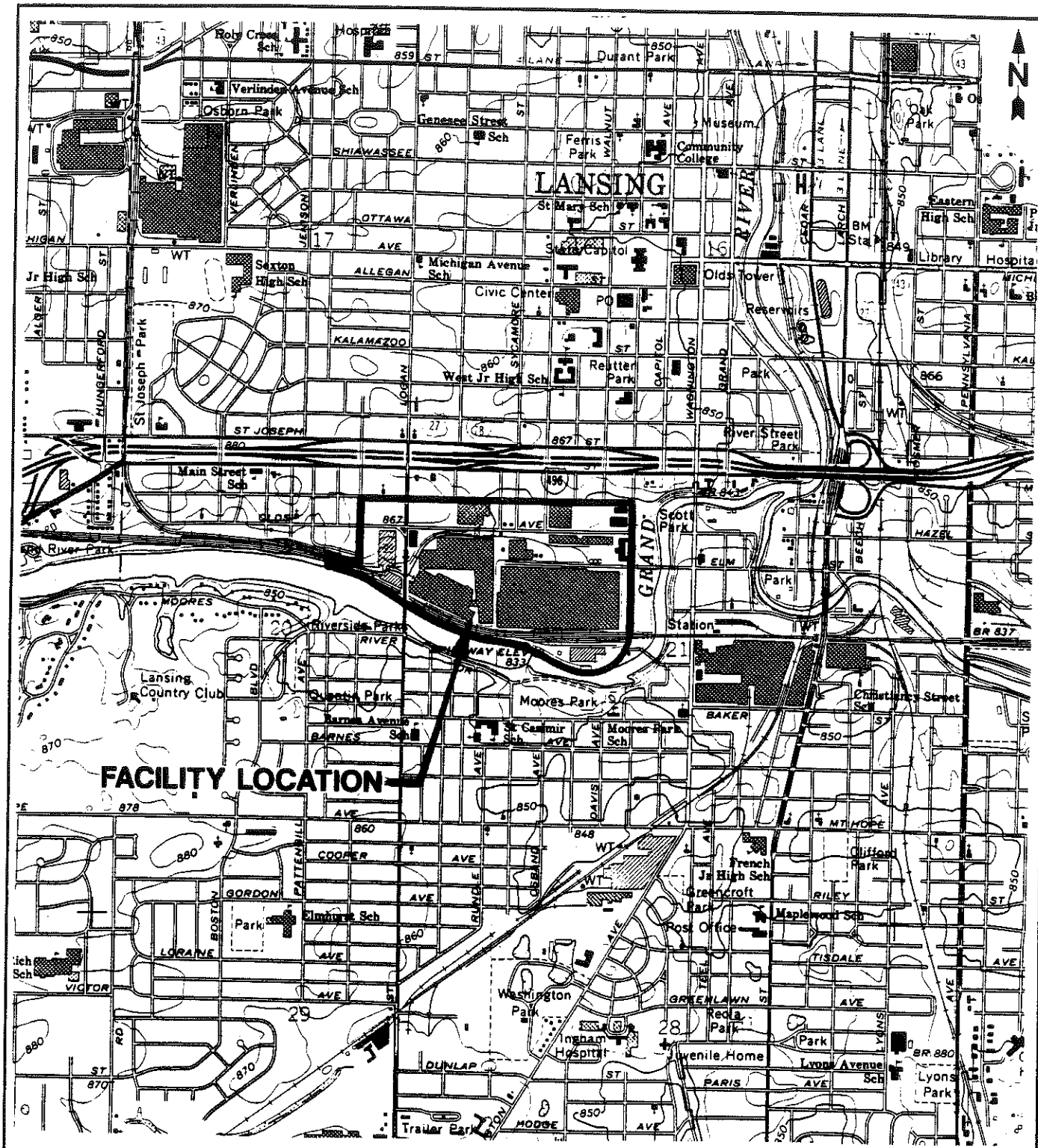
The facility is bordered on the north by Interstate 496, the Lansing Chamber of Commerce, and residences; on the west by residences; on the south by railroad tracks, the Grand River, and Moores Park; and on the east by the Grand River, Scott Park, and residential and commercial buildings.

2.2 FACILITY OPERATIONS

The BOC facility manufactures parts for and assembles the Pontiac Grand Am and the Oldsmobile Achieva. The facility has manufactured and assembled various automobiles at this location since 1902.

From 1902 until 1908, Oldsmobile Motor Works operated the facility. In 1908, Oldsmobile Motor Works became part of the General Motors Corporation. In January 1984, General Motors Corporation reorganized its North American passenger car operations into the two following areas: (1) the Buick-Oldsmobile-Cadillac Group, and (2) the Oldsmobile Division. During 1990 and 1991, General Motors Corporation reorganized its operations into the three following areas: (1) the Buick-Oldsmobile-Cadillac Group, (2) the Powertrain Division, and (3) the Oldsmobile Division. The Buick-Oldsmobile-Cadillac Group has operated the facility since 1984.

The facility employs about 8,625 people working three shifts, 7 days per week. The facility conducts the following operations: (1) machining 6-cylinder (V-6) engines; (2) manufacturing automobile front ends (fascias), bumpers, and gasoline tanks; (3) remanufacturing 8-cylinder (V-8) engines; (4) repairing pumps and valves; (5) painting automobile fascias, bumpers, and engine parts; (6) testing engines; and (7) assembling hoods, gasoline tanks, V-6 engines, and two automobile body styles.



SCALE 1:24,000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

SCALE: 1" = 2,000'

BUICK – OLDSMOBILE – CADILLAC GROUP
A DIVISION OF GENERAL MOTORS CORPORATION
(FORMERLY GMC PLANT 1)
LANSING, MICHIGAN

FIGURE 1

FACILITY LOCATION

PRC ENVIRONMENTAL MANAGEMENT, INC.

SOURCE: MODIFIED FROM USGS, 1973

GMC-BOC1.DWG – 4/28/92 – MLB

From about 1962 until about 1984 the facility conducted zinc phosphating operations. From about 1980 until about 1989 the facility also conducted plastic molding operations.

The facility most likely conducted additional manufacturing activities since 1902, but due to time restraints, the age of the facility, and the size of past and current operations facility representatives were unable to provide a comprehensive facility history during the VSI. SWMUs are identified in Table 1. The facility layout, including SWMU locations, is shown in Figure 2.

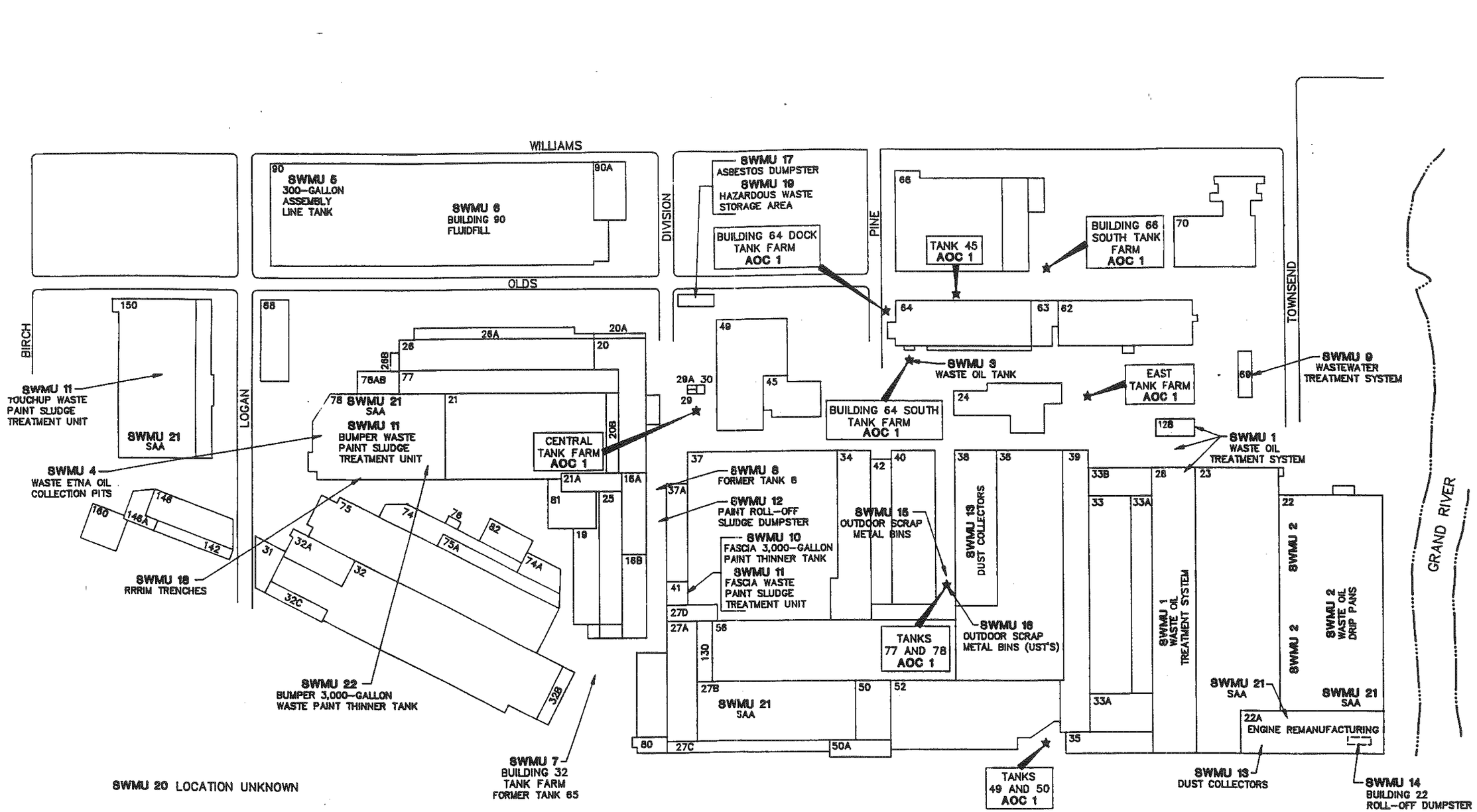
2.3 WASTE GENERATING PROCESSES

The BOC facility generates numerous waste streams. Wastewater sludge is generated from the Wastewater Treatment System (SWMU 9) which services all operations throughout the facility. Nonhazardous waste oil is generated from the Waste Oil Treatment System (SWMU 1) which services (1) engine machining, assembling, and remanufacturing operations, and (2) automobile assembling operations. The facility generates waste paint (D001, D007, F003, F005), nonhazardous paint sludge, and paint thinner (D001, D007, F003, F005) from engine, fascia, and bumper painting operations. Baghouse dust (D008) is generated from gas tank manufacturing. Nonhazardous baghouse dust is generated from engine remanufacturing and pump and valve repair.

The facility conducts wet machining of parts, which uses lubricating oil, and dry machining of parts, which does not use oil. Both processes produce waste metal chip shavings. In the wet process, the waste is mixed with nonhazardous lubricating oil and used filter paper. Scrap metal is generated from engine machining, engine remanufacturing, gas tank manufacturing, and automobile assembling.

Asbestos is generated from engine remanufacturing operations. Adhesive waste (D001) is generated during engine and hood assembly. Nonhazardous waste polyall and waste isocyanate solids are generated during fascia and bumper manufacturing.

Waste solvents (D001, D007, F003, F005) are generated from pump and valve repair, fascia and bumper manufacturing, and hood assembly. Automobile assembling operations generate waste gasoline (D001, D018) and waste brake fluid (D001, D018). Waste gasoline (D001, D018) is also generated during engine testing. Wastewater filter cake (F001) was generated from former plating and phosphating operations. Solid sheet molding compound (SMC) waste resin (D001, D006, D008, D009) containing styrene and metals was generated during plastic molding operations. Wastes generated at the facility are summarized in Table 2.



SOURCE: MODIFIED FROM ABB ENVIRONMENTAL SERVICES, INC., FEBRUARY, 1992

BUICK – OLDSMOBILE – CADILLAC GROUP
A DIVISION OF GENERAL MOTORS CORPORATION
(FORMERLY GMC PLANT 1)
LANSING, MICHIGAN

FIGURE 2

SWMU AND AOC LOCATIONS

PRC ENVIRONMENTAL MANAGEMENT, INC.

GMC-SOC.DWG – 4/28/92 – MLB

TABLE 1

SOLID WASTE MANAGEMENT UNITS (SWMU)

SWMU Number	SWMU Name	RCRA Hazardous Waste Management Unit*	Status
1	Waste Oil Treatment System	No	Active
2	Waste Oil Drip Pans	No	Active
3	Waste Oil Tank	No	Active
4	Waste Etna Oil Collection Pits	No	Active
5	300-Gallon Assembly Line Tank	No	Active
6	Building 90 Fluid Fill	No	Active
7	Former Tank 65	No	Inactive, removed in 1990
8	Former Tank 8	No	Inactive since 1988
9	Wastewater Treatment System	No	Active
10	Fascia 3,000-Gallon Waste Paint Thinner Tank	No	Active
11	Bumper, Fascia, and Touch-Up Waste Paint Sludge Treatment Units	No	Active
12	Paint Roll-Off Sludge Dumpster	No	Active
13	Dust Collectors	No	Active
14	Building 22 Roll-Off Dumpster	No	Active
15	Outdoor Scrap Metal Bin	No	Active
16	Outdoor Scrap Metal Bin UST	No	Active
17	Asbestos Dumpster	No	Active

TABLE 1 (Continued)

SOLID WASTE MANAGEMENT UNITS (SWMU)

SWMU Number	SWMU Name	RCRA Hazardous Waste Management Unit*	Status
18	RRRIM Trenches	No	Active
19	Hazardous Waste Storage Area	Yes	Active
20	Former Phosphating Operations Wastewater Treatment System	No	Inactive since 1984
21	SAAs	No	Active; SMC Purge Resin SAA inactive since 1989
22	Bumper 300-Gallon Waste Paint Thinner Tank	No	Active, less than 90 day storage

Note:

* A RCRA hazardous waste management unit is one that currently requires or formerly required submittal of a RCRA Part A or Part B permit application.

TABLE 2

SOLID WASTES

Waste/EPA Waste Code	Source	Primary Management Unit*
Wastewater Sludge / NA**	Wastewater Treatment System	SWMU 9 and 14
Waste Oil / NA	Waste Oil Treatment System, engine machining and remanufacturing, automobile assembly, fascia and bumper manufacturing, engine testing	SWMUs 1, 2, 3, 4, 5, 6, 7, 14, 16, and 21
Waste Paint and Paint Thinner / D001, D007, F003, F005	Engine head and block painting, routine heavy machine maintenance, bumper, fascia, and touch-up painting, automobile touch-up painting	SWMUs 10, 19, 21, 22, and formerly 8
Waste Paint Precipitate Sludge / NA	Engine, fascia, and bumper manufacturing, touch-up painting operations	SWMU 11
Baghouse Dust / D008	Gas tank manufacturing	SWMUs 13 and 19
Baghouse Dust / NA	Engine remanufacturing and pump and valve repair	SWMUs 13 and 19
Metal Chip Shavings / NA	Engine machining and remanufacturing	SWMUs 15 and 21
Wet Machining Residue and Used Filter Paper / NA	Engine machining and remanufacturing	SWMUs 14 and 21
Scrap Metal / NA	Engine machining, engine remanufacturing, gas tank manufacturing, automobile assembly	SWMU 15
Asbestos / NA	Engine remanufacturing	SWMU 17
Adhesive Waste / D001	Hood assembly, engine remanufacturing	SWMUs 19 and 21
Waste Polyall and Isocyanates / NA	Fascia and bumper manufacturing	SWMUs 18, 19, and 21
Waste Solvents / D001, D007, F003, F005	Pump and valve repair, fascia and bumper manufacturing, hood assembly	SWMUs 19 and 21
Waste Gasoline / D001, D018	Automobile assembly, engine testing	SWMUs 5, 6, 19, and formerly 7

TABLE 2 (Continued)

SOLID WASTES

Waste/EPA Waste Code	Source	Primary Management Unit*
Waste Brake Fluid / D001, D018	Automobile assembly	SWMUs 5, 6, and formerly 7
Former Phosphating Operations Wastewater Filter Cake / F006	Former phosphating operations	SWMUs 19 and 20
Former SMC Purge Resin /D001, D006, D008, D009	Former SMC plastics operations	SWMUs 18, 19, and 21

Notes:

* Primary management unit refers to a SWMU that currently manages or formerly managed the waste.

** Nonapplicable (NA) designates nonhazardous waste.

The sewer system at the facility consists of three separate systems: (1) the sanitary system; (2) the storm water runoff system, and (3) the industrial process water system. The sanitary system conveys only domestic sewage, which flows directly to the City of Lansing sanitary sewer for treatment. All storm water runoff from the administration building, parking lots, and some manufacturing building roofs flows into the Grand River. No storm sewer manholes are inside the plant.

The industrial process sewer system conveys all liquid wastes from manufacturing buildings and general process wastes to the Wastewater Treatment System (SWMU 9) located in Building 69. The water collects in an underground wet well and is pumped through a bar screen to remove large solids, such as gloves and rags. The bar screen solids are collected in a dumpster, transferred to the Building 22 Roll-Off Dumpster (SWMU 14), and sent to Granger Landfill in Lansing, Michigan.

The water is then pumped to one of two underground API separators. Inside the API separator, a rotating chain removes solids and oil from the water. Treated water is discharged to the City of Lansing sanitary sewer. The solids are collected in a gondola, transferred to the Building 22 Roll-Off Dumpster (SWMU 14), and sent to Granger Landfill in Lansing, Michigan. The oil sludge is pumped to a cyclone, where water and oil are separated, and then to an underground holding tank. The water is decanted and pumped back to the receiving underground wet well to be treated. The oil is removed by City Environmental of Detroit, Michigan. About 15,000-20,000 gallons of waste oil are generated from this process each year.

Waste hydraulic oil from engine machining and remanufacturing operations is collected in Waste Oil Drip Pans (SWMU 2), which are placed beneath machines throughout the facility. A 700-gallon vac truck collects the oil and transports it to the Waste Oil Treatment System (SWMU 1). Waste hydraulic oil from wet machining operations is also collected from the Building 22 Roll-Off Dumpster (SWMU 14). The excess oil is collected via a 700-gallon vac truck and transported to the Waste Oil Treatment System (SWMU 1).

Waste soluble oil from engine testing is pumped to a 1,000-gallon aboveground steel Waste Oil Tank (SWMU 3) in the Building 64 Tank Farm. A 700-gallon vac truck collects the oil and transports it to the Waste Oil Treatment System (SWMU 1). Waste soluble oil from automobile assembly is collected in the aboveground 300-Gallon Assembly Line Tank (SWMU 5) and transported via a 700-gallon vac truck to the Waste Oil Treatment System (SWMU 1). Waste oil is also collected in the Building 90 Fluid Fill (SWMU 6) belowground tank. Depending on the flash point of the waste, it is either transported via vac truck to the Waste Oil Treatment System (SWMU 1) or sent off-site for treatment via a tank car. Formerly, the oil was pumped to and

accumulated in Former Tank 65 (SWMU 7), a 12,000-gallon underground steel tank, then treated at SWMU 1 or shipped off site for treatment.

The Waste Oil Treatment System (SWMU 1) is located in Buildings 128 and 28 and began operating prior to 1960. Waste hydraulic oil is accumulated in a 700-gallon aboveground steel tank in Building 28 prior to treatment. Until October 1991, waste oil was accumulated in a 10,000-gallon UST under Building 28. Treatment in Building 28 consists of separating oil and water through gravity, heating the oil in two 750-gallon steel tanks, storing the oil in two 5,000-gallon aboveground steel tanks, and sending the oil to a 1,000-gallon centrifuge. The oil is then transferred via underground pipes to Building 128 and is accumulated in a 10,000-gallon steel tank prior to removal by City Environmental of Detroit, Michigan. Wastewater is sent to the Wastewater Treatment System (SWMU 9) for treatment.

In SWMU 1, waste soluble oil is accumulated in two concrete underground 50,000-gallon batch holding tanks located between Buildings 128 and 28. Alum, emulsion polymers, and flocculation polymers are added to the oil. The oil is placed into one of two 4,500-gallon dissolved air flotation tanks that cause the sludge oil to float. The sludge is then pumped to building 128, and placed into two 10,000-gallon aboveground steel holding tanks prior to removal by City Environmental of Detroit, Michigan. Wastewater is sent to the Wastewater Treatment System (SWMU 9). Formerly the sludge oil was accumulated in two 8,000-gallon underground steel tanks and pumped daily to a 12,000-gallon underground steel tank contained by a concrete vault.

Waste etna oil from RRRIM operations is collected in the Waste Etna Oil Collection Pits (SWMU 4) beneath the RRRIM machines. A Rover truck collects the oil, which contains ethylene glycol and water, and transports it to the Waste Oil Treatment System (SWMU 1).

Waste etna oil is accumulated in a 250-gallon steel aboveground day tank in Building 28 (SWMU 1). It is then pumped to one of two 10,000-gallon steel aboveground tanks in Building 128. Water is decanted and put into the soluble oil 50,000-gallon concrete underground batch tank for treatment. The decanted oil is heated for 3 days in one of four 750-gallon insulated tanks and transferred to a 5,000-gallon steel aboveground tank in Building 28. From the 5,000-gallon steel tank, the etna oil is filtered and transferred via 300-gallon tanks back to the RRRIM building to be reused.

Waste experimental oil, sometimes generated from engine testing, is collected in 55-gallon drums and transferred via to a 10,000-gallon steel aboveground tank in Building 128 (SWMU 1). The oil is separated by gravity and sent to a 1,000-gallon centrifuge in Building 28 (SWMU 1).

Wastewater is sent to the Wastewater Treatment System (SWMU 9) for treatment. The oil is accumulated in another 10,000-gallon steel aboveground tank in building 128 prior to removal by City Environmental of Detroit, Michigan. Formerly, this oil was pumped to a 20,000-gallon underground steel lined concrete holding tank. The treated oil was accumulated in two 10,000-gallon underground steel tanks prior to removal. About 350,000 gallons of nonhazardous waste oil is generated per year.

Gas tank assembly generates baghouse dust (D008). The facility receives the gas tank in two halves, which are cleaned by a bead blast machine, then welded together. The bead blast dust (D008) is collected in a 55-gallon drum Dust Collector (SWMU 13) beneath the baghouse. When full, the drum is transferred to the Hazardous Waste Storage Area (SWMU 19) prior to removal. About 2,950 gallons are generated per year.

Engine remanufacturing and pump and valve repair operations also generate baghouse dust. Engines, pumps, and valves are cleaned by a shot blast machine; the dust generated is collected in 55-gallon drum Dust Collectors (SWMU 13) beneath each baghouse. When full, the drums are transferred to the Hazardous Waste Storage Area (SWMU 19) prior to removal. Engine remanufacturing baghouse dust is nonhazardous; about one 55-gallon drum is generated every 2 years. Pump and valve repair operations are new, and the baghouse dust is being evaluated. The volume generated per year is unknown.

Rough engine blocks and other engine components are machined before final engine assembly. Machining consists of steam cleaning engine components to remove dirt, oil, and other debris, filing the rough edges off, and polishing the components for final assembly. Machining residue, consisting of metal filings, residual oil, and oily water, is gathered in a dragout unit and filtered. Wet machining residue and filter paper are collected in 1-cubic-yard Satellite Accumulation Areas (SWMU 21) and transported to the Building 22 Roll-Off Dumpster (SWMU 14) prior to disposal at Granger Landfill. About 425 cubic yards of wet machining residue and filter paper are generated per year.

Scrap metal, some covered with oil, from throughout the facility is placed into the Outdoor Scrap Metal Bins (SWMU 15). Excess oil from SWMU 15 drains into the Outdoor Scrap Metal Bin UST (SWMU 16) and is pumped via underground pipes to the Waste Oil Treatment System (SWMU 1).

Waste paint and paint thinner (D001, D007, F003, F005) result from four operations. Engine heads and blocks are painted during V-6 manufacturing processes. Waste thinner and waste paint are accumulated in 55-gallon drums in Satellite Accumulation Areas (SWMU 21) near

the paint spray booth. When full, each drum of waste paint (D001) is transported to the Hazardous Waste Storage Area (SWMU 19) to await disposal at a licensed hazardous waste landfill. About 165 gallons of waste paint (D001) from engine painting operations are generated per year. When the drum of waste paint thinner (D001, D007, F003, F005) is full, it is transported to the Hazardous Waste Storage Area (SWMU 19) to await removal to a licensed hazardous waste landfill. About 222 gallons of waste paint thinner from engine painting operations is generated per year.

Waste paint also results from routine heavy machine maintenance. Forklifts and other heavy machinery are painted on a regular basis. Waste paint (D001, D007, F003, F005) is accumulated in a 55-gallon drum in a Satellite Accumulation Area (SWMU 21). Once full, the drum is transported to the Hazardous Waste Storage Area (SWMU 19) to await removal to Granger Landfill.

Bumper, fascia, and touch-up painting generates waste paint and paint thinner (D001, D007, F003, F005). Newly manufactured bumpers and fascias, and newly assembled automobiles are placed on a conveyor belt and sent through a paint spray booth. The spray booth is located above a pool of continually moving water that accumulates paint overspray. The paint and water is collected and sent to the Bumper, Fascia, and Touch-Up Waste Paint Sludge Treatment Units (SWMU 11), which consist of tanks below the spray booth. Chemicals are added to the water to create a nonhazardous waste paint precipitate sludge . The water is filtered and reused. The nonhazardous waste paint precipitate sludge is collected in a hopper and transferred to the Paint Roll-Off Sludge Dumpster (SWMU 12) to await removal to Granger Landfill. About 1,300 cubic yards of waste paint are generated per year.

Waste paint thinner (D001, F003, F005) from bumper painting activities is collected in the Bumper 300-Gallon Waste Paint Thinner Tank (SWMU 22). The waste paint thinner (D001, F003, F005) is transferred into 55-gallon drums, placed in the Hazardous Waste Storage Area (SWMU 19), and removed by Inland Water Pollution Control, Detroit, Michigan. About 6,540 gallons of waste paint thinner (D001, F003, F005) are generated from bumper painting operations per year.

Waste paint thinner (D001, D007, F003, F005) from fascia painting activities is collected in the Fascia 3,000-Gallon Paint Thinner Tank (SWMU 10). Formerly, the waste paint thinner was collected in Former Tank 8 (SWMU 8), an 8,000-gallon underground steel tank which has been inactive since 1988. The waste paint thinner (D001, D007, F003, F005) is removed via tanker truck and transported to PetroChem, Detroit, Michigan. About 24,697 gallons of waste paint thinner (D001, D007, F003, F005) are generated from fascia painting operations per year.

Waste paint thinner (D001, D007, F003, F005) from automobile body touch-up paint is collected in a 55-gallon drum in a Satellite Accumulation Area (SWMU 21), transported to the Hazardous Waste Storage Area (SWMU 19), and removed by Inland Water Pollution Control, Detroit, Michigan. About 2,835 gallons of waste paint thinner (D001, D007, F003, F005) are generated from touch-up operations per year.

Dry machining is done without lubricating oil. Dry machining chip waste is collected in Satellite Accumulation Areas (SWMU 21) and transferred to the Outdoor Scrap Metal Bin (SWMU 15) prior to disposal. About 3,750 tons of dry machining chip waste is generated per year.

Asbestos waste results from remanufacturing of V-8 engines. All asbestos containing material (ACM) is placed into 4-millimeter plastic bags, transferred to the Asbestos Dumpster (SWMU 17), removed by a licensed waste hauler and disposed of at a permitted hazardous waste landfill. About 1 cubic yard of ACM waste is generated per month.

Adhesive waste (D001) results from remanufacturing of water pumps for V-8 engines, and from hood assembly. The facility receives product adhesive in plastic-lined 55-gallon drums. Adhesive is removed from the drum by applying pressure to the lid and forcing it down. The waste consists of a small amount of adhesive at the bottom of the drum that cannot be forced out. The plastic bag containing adhesive is removed from the drum and placed into 55-gallon drums in Satellite Accumulation Areas (SWMU 21). When the satellite drums are full, they are transferred to the Hazardous Waste Storage Area (SWMU 19) and removed by a licensed waste hauler. About 1,875 gallons of adhesive waste are generated per year.

Nonhazardous waste polyall and isocyanates and waste solvents (D001, D007, F003, F005) are generated during fascia and bumper manufacturing. Raw polyall and raw isocyanates are pumped into lines where a reaction takes place. The mixture is transferred to a mold, to form a bumper or fascia. Nonhazardous waste solids from the molds are shoveled into the RRRIM Trenches (SWMU 18). Solids are collected from the trenches and placed into 55-gallon drum Satellite Accumulation Areas (SWMU 21). When the satellite drums are full, they are transferred to the Hazardous Waste Storage Area (SWMU 19) and removed by City Environmental, Detroit, Michigan. The facility cleans the pumps with a solvent (methylene chloride). A small amount of methylene chloride is poured from a 55-gallon drum into a parts cleaner where the pump is cleaned. Waste methylene chloride (D001) is collected in a bucket beneath the parts cleaner and transferred via a funnel to a 55-gallon drum in a Satellite Accumulation Area (SWMU 21). When

the drum is full, it is transferred to the Hazardous Waste Storage Area (SWMU 19) and removed by PetroChem, Detroit, Michigan. About 55 gallons of waste solvent are generated per year.

Pump and valve repair also generates waste solvents (D001, D007, F003, F005). Small parts are cleaned using trichloroethene (TCE) or 1,1,1-trichloroethane (TCA). Waste solvent is collected in a bucket beneath the parts cleaner and funneled to a 55-gallon drum in the Satellite Accumulation Areas (SWMU 21). When the drums are full, they are transferred to the Hazardous Waste Storage Area (SWMU 19) and removed by PetroChem, Detroit, Michigan. About 55 gallons of each waste stream is generated per year.

Waste gasoline and waste brake fluid (D001, D018) are generated during automobile assembly engine testing procedures. If, after the auto is assembled, the engine does not pass quality control procedures, the entire auto is drained of fluids. These fluids are collected in the aboveground 300-Gallon Assembly Line Tank (SWMU 5) and transported via a 700-gallon vac truck to the Hazardous Waste Storage Area (SWMU 19).

From about 1962 until about 1984, the facility conducted zinc phosphating operations. The Former Phosphating Operations Wastewater Treatment System (SWMU 20) generated about 247,923 pounds of wastewater treatment sludge (F006). The hydroxide sludge was placed into 55-gallon drums in a Satellite Accumulation Area (SWMU 21), and transferred to the Hazardous Waste Storage Area (SWMU 19), and disposed of by a licensed waste hauler.

From about 1980 until about 1989, the facility manufactured fascias using a plastics operation that produced a solid SMC waste resin (D001, D006, D008, D009) which contained styrene and metals. The solids were shoveled into the RRRIM Trenches (SWMU 18). Solids were collected, placed into 55-gallon drums in SAA (SWMU 21), and transferred to the Hazardous Waste Storage Area (SWMU 19) when full. About 192,576 pounds of purge resin were generated per year.

Manufacturing operations and wastes generated have changed at the facility since it was built in 1902. Facility representatives were not able to provide information about manufacturing operations and waste management practices prior to about 1960, because of the amount of research that would be required.

2.4 HISTORY OF DOCUMENTED RELEASES

This section discusses the history of documented releases to ground water, surface water, air, and on-site soils at the BOC facility.

On August 2, 1988, an apparent leak was discovered in an underground storage tank (UST), designated as Tank No. 8 (Former Tank 8, SWMU 8), during an assessment of the tank's integrity. Prior to August 2, 1988, the UST was used to accumulate hazardous waste solvent (D001, D007, F003, F005), primarily methyl ethyl ketone, xylene, and toluene. The contractor performing the tank assessment, E.C. Jordan, collected 20 soil samples from four borings. Soil samples were collected at depths ranging from 6 feet below ground surface (bgs) to 25.5 feet bgs. Analysis indicated the presence of xylene (60 to 400 mg/kg), methyl ethyl ketone (64 to 100 mg/kg), toluene (7 to 390 mg/kg), and ethylbenzene (4 to 45 mg/kg) (E.C. Jordan Company, 1988). MDNR received a copy of this report in 1988. To date, no corrective action has been taken.

A 1989-1990 facility investigation to assess the extent and impact of releases from underground storage tanks was performed to comply with 40 CFR 280, Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks. The investigation revealed ground water and soil contamination in the area of eight Facility Tank Farms (AOC 1) (ABB, 1991). Included within the Facility Tank Farms are the Waste Oil Tank (SWMU 3), Former Tank 65 (SWMU 7), the Outdoor Scrap Metal Bin (SWMU 15), and the Outdoor Scrap Metal Bin USTs (SWMU 16).

Soil samples from soil borings from the 1989-1990 facility investigation were analyzed for benzene, toluene, ethylbenzene, xylene (BTEX), total petroleum hydrocarbons (TPH), total lead, barium, selenium, chromium, copper, and zinc, and other volatile organic compounds (VOC). Analysis indicated the presence of BTEX compounds (1 mg/kg to >100 mg/kg), TPH (71,000 mg/kg), total lead (1.0 mg/kg to 130 mg/kg), barium (5.9 to 81 mg/kg), selenium (4 mg/kg), and chromium (3.4 mg/kg to 28 mg/kg). Analysis of soil samples for other VOCs indicated the presence of VOCs (0.7 mg/kg to 15 mg/kg) at the Tank 45 Tank Farm and less than 1 mg/kg at the Central Tank Farm. Perched ground-water sample analysis indicated the presence of BTEX compounds (1 mg/L to 100 mg/L), TPH (nondetectable to 46 mg/L), and other VOCs (0.022 mg/L to 12 mg/L) (ABB, 1992). Additionally, 1-inch of free petroleum products was observed at the top of the uppermost bedrock aquifer, near the East Tank Farm, about 60 feet bgs.

Between December 1991 and January 1992, the BOC facility conducted an area-wide investigation to further define the nature and extent of releases from facility tank farms. Soil samples were collected during monitoring well installation, and ground-water samples were collected from the uppermost bedrock aquifer. These samples were analyzed for VOCs, TPH, polynuclear aromatic hydrocarbons (PAH), and metals. Analysis of soil samples indicated the presence of VOCs ranging from chloroform, tetrachloroethene, trichloroethene, and ethylbenzene

(1 µg/L) to xylene (7,700 µg/L); PAH [naphthalene (230 µg/kg)]; and metals ranging from cadmium (0.04 mg/kg) to barium (34 mg/kg). Analysis of ground-water samples indicated the presence of VOCs ranging from 1,1-dichloroethane, 1,1-dichloroethene, 1,2-dichloroethane, 1,2-dichloropropane, chloroform, ethylbenzene, trichloroethene, and trans-1,2-dichloroethene (1 µg/L) to xylene (2,700 µg/L); TPH (3,000 µg/L to 13,000 µg/L), PAH [naphthalene (54 µg/L); and metals ranging from cadmium (0.001) to zinc (4.1 mg/L) (ABB, 1992).

Facility representatives sent a copy of the Interim Site Investigation Report # 2 to MDNR and PRC in March, 1992. The Interim Site Investigation Report contains the 1991 Site Investigation Plan. At the time of the PA/VSI, the MDNR enforcement file was not available for review because of current MDNR enforcement activity at the facility. MDNR would not provide any information about its current enforcement activity because of state confidentiality requirements.

No additional releases at the facility have been documented.

2.5 REGULATORY HISTORY

BOC submitted a notification of hazardous waste activity to EPA on August 7, 1980 (BOC, 1980a). The facility submitted a RCRA Part A permit application on November 14, 1980 (BOC, 1980b). This application listed the following process codes and capacities: S01 (86,300 gallons), S02 (77,000 gallons), T01, (359,700 gallons per day), T04 (16,408,600 gallons per day). The application listed the following wastes: D001, D002, D003, F001, F002, F005, F007, F008, F009, F015, U080, U121, U226.

On November 30, 1982, BOC submitted a Part B permit application to operate a hazardous waste container storage area (SWMU 19). The application included the following wastes: D004, D005, D006, D007, D008, D009, and F006. A Part B permit was issued on March 29, 1984 and will expire on March 29, 1994. The permit authorized BOC to store D001, D002, D004, D005, D006, D007, D008, D009, F001, F002, and F006 wastes in containers in the hazardous waste Container Storage Area (SWMU 19) (EPA, 1984).

BOC does not have any National Pollution Elimination Discharge System (NPDES) permits. The facility's sanitary sewer directs domestic sewage to the City of Lansing sanitary sewer for treatment (BOC, 1983). The facility's industrial process waste sewer directs all liquid wastes from manufacturing buildings and general process wastes to an API separator in Building 69's Wastewater Treatment System (SWMU 9). Treated waste is discharged into the City of Lansing sanitary sewer (BOC, 1983).

BOC has about 40 air operating permits for various operations throughout the facility (see Attachment D). In September and October 1986, MDNR investigated two complaints of "airplane glue"-like odors by a Lansing resident south of the facility. MDNR was unable to locate the source of the odor. MDNR nevertheless notified the facility of the odor complaints and stated that additional care should be taken to minimize potential emissions (MDNR, 1986b).

In the past, the facility has had minor RCRA compliance problems. These violations, observed during a series of MDNR inspections between 1981 and 1990, pertained mainly to improper placarding in Hazardous Waste Storage Areas (SWMU 19), improper labeling of drums and tanks containing hazardous waste, and failure to inspect interim status and 90-day accumulation tank and secondary containment systems daily. No orders were issued as a result of the inspections (MDNR, 1985, 1986a, 1987, 1989, 1990, 1991).

The facility is currently regulated as a generator and treatment/storage/disposal facility.

2.6 ENVIRONMENTAL SETTING

This section describes the climate, flood plain and surface water, geology and soils, and ground water in the vicinity of the BOC facility.

2.6.1 Climate

The climate of the Lansing, Michigan, area is characterized by mild continental conditions. Weather conditions are monitored at the Capital City Airport, located 3 miles northwest of the facility. The annual average low temperature is 37.2°F, and the annual average high temperature is 57.1°F. The annual average precipitation (rainfall and snowfall) is 29.58 inches and is moderately distributed over the year, with peak rainfall in June. The annual average net precipitation is 3.3 inches. The 1-year, 24-hour rainfall value is 2.0 inches. The prevailing wind direction is southwest at an average speed of 10 miles per hour (National Weather Service, 1990).

2.6.2 Flood Plain and Surface Water

The facility is between 830 and 850 feet above mean sea level. The southern and eastern boundaries of the facility are adjacent to the Grand River. Surface water appears to drain in a south-southeasterly direction toward the Grand River, which flows in an easterly direction. The

facility is located in a Zone C flood plain area (FEMA, 1981), which is considered an area of minimal flooding.

2.6.3 Geology and Soils

Lansing is located in Michigan's lower peninsula, in the Central Lowlands physiographic province. The province is characterized by glacial deposits underlain by sedimentary bedrock of the Paleozoic and Mesozoic age. Area glacial deposits consist of sand, silt, gravel, and clay.

The topography of Ingham County consists of glacial features characterized by flat till plains to slight hilly areas of moraines and outwash deposits. Surficial deposits in the Lansing area predominantly consist of glacial outwash plains.

The Pennsylvanian age bedrock of the area consists of the Saginaw and Grand River formations, which are hydraulically connected. The Saginaw formation consists of sandstones and shales interbedded with limestone and coal; its thickness ranges from 10 feet to several hundred feet. The Grand River formation, consisting of sandstone, lies below the Saginaw formation and varies in thickness. The Grand River formation is eroded in the Lansing area (National Weather Service, 1990).

Surficial deposits in the Lansing area are predominantly composed of glacial tills consisting of medium to coarse sand underlain by clay and silt beds. A perched water table lies about 6 feet below ground surface (bgs) above the locally continuous silty clay layer.

As part of an Interim Site Investigation at the BOC facility in 1991, monitoring wells were installed at eight locations along the facility's perimeter. Soil was characterized at 5-foot intervals during monitoring well installation. Surface soils at the facility generally consist of glacial drift deposits underlain by bedrock. Glacial drift is characterized by sandy to silty clay with sand and silty sand interbeds and discontinuous gravel lenses. Bedrock is present at depths ranging from 22 to 55 feet bgs. The upper portion of the bedrock is about 40 feet thick and consists of shale with thin discontinuous layers of sandstone (ABB, 1992).

2.6.4 Ground Water

Ingham County obtains drinking water from two principal aquifer systems: (1) a glacial outwash and lacustrine aquifer, and (2) a bedrock aquifer system. These systems are discussed in the following paragraphs.

The glacial outwash and lacustrine aquifer system ranges in thickness from 10 to several hundred feet thick and produces up to 1,000 gallons per minute (gal./min.) of water. Organic soil and glacial fill material are found from 0 to 23 feet bgs. The glacial aquifer system is composed of outwash and glaciofluvial deposits of sand and gravel.

The bedrock aquifer system of the Saginaw formation is Ingham County's principle bedrock aquifer (USDA, 1978). The Saginaw formation ranges in thickness from 10 to several hundred feet, and yields up to 300 gal./min. The depth to the aquifer in Ingham County typically ranges from 150 to 220 feet bgs. Static water levels in wells in Ingham County range from 25 to 50 feet bgs. The aquifer is confined and has an average transmissivity of 130,300 square feet per day. Ground water in the Saginaw formation flows north-northeast.

Ground water is present at the facility in the interbedded sandstone/shale bedrock about 55 to 95 feet bgs. The upper portion of the aquifer consists primarily of sandstone in the central and northwestern portions of the facility and shale in the southern and northeastern portions of the facility. Ground-water elevations in monitoring wells were higher than the aquifer elevation, suggesting confined aquifer conditions (ABB, 1992). Perched water table conditions are present in several areas at the facility (ABB, 1991).

2.7 RECEPTORS

The facility occupies 190 acres in a mixed use area in Lansing, Michigan. Lansing has a population of about 123,000. The facility is bordered on the north by Interstate 496, the Lansing Chamber of Commerce, and residences; on the west by residences; on the south by railroad tracks, the Grand River, and Moores Park; and on the east by the Grand River, Scott Park, and residential and commercial buildings.

The nearest residence is about 50 feet west of the facility. The nearest school, Main Street School, is about 500 feet north. Facility access is controlled by a barbed wire fence and a 24-hour alarm system.

The nearest surface water body, the Grand River, is adjacent to the facility on the south and east. Other surface water bodies in the area include the Red Cedar River, located about 2 miles east of the facility. Both rivers are used primarily for recreational purposes. Ground water is used as a source of drinking water. Two municipal wells are located east of the Grand River, about 3,300 feet east of the plant, upgradient of the facility.

Wetlands are located about 3 miles northwest of the facility. Moores Park is located along the Grand River, directly south of the facility. The Carl G. Fenner Arboretum and Scott Woods Park are located about 2 miles southeast of the facility. Riverside Park is located about 0.5 mile west of the facility. Washington Park is located about 1 mile south of the facility. Frances Park and Grand River Park are located about 1 mile west of the facility. According to information obtained at the time of the VSI and from the USGS topographic map, no habitat or endangered species and no other sensitive environments are located within 2 miles of the facility.

3.0 SOLID WASTE MANAGEMENT UNITS

This section describes the 22 SWMUs identified during the PA/VSI. The following information is presented for each SWMU: description of the unit, dates of operation, wastes managed, release controls, history of documented releases, and PRC observations.

SWMU 1 **Waste Oil Treatment System**

Unit Description:

This unit consists of aboveground tanks located in Buildings 128 and 28, and underground tanks between Buildings 128 and 28. The system treats four types of nonhazardous waste oil generated throughout the facility (see Photograph Nos. 1, 2, and 3).

The waste hydraulic oil treatment system consists of (1) a 700-gallon aboveground steel tank, two 750-gallon aboveground steel tanks; (2) two 5,000-gallon aboveground steel tanks; and (3) a 1,000-gallon centrifuge in Building 28. Underground pipes pump the treated oil to a 10,000-gallon aboveground steel tank in Building 128. The waste hydraulic oil treatment system formerly had a 10,000-gallon steel UST under Building 28.

The waste soluble oil treatment system consists of (1) two underground concrete 50,000-gallon batch tanks between Buildings 128 and 28; (2) two 4,500-gallon steel dissolved air flotation tanks in Building 28; and (3) two 10,000-gallon aboveground steel holding tanks in Building 128. The waste soluble oil treatment system formerly had two 8,000-gallon steel USTs and one 12,000-gallon steel UST.

The waste etna oil treatment system consists of (1) a 250-gallon steel aboveground tank, four 750-gallon insulated tanks, and a 5,000-gallon steel aboveground tank in Building 128; and (2) two underground concrete 50,000-gallon batch tanks between Buildings 128 and 28.

The waste experimental oil treatment system consists of a 10,000-gallon steel aboveground tank in Building 128 and a 1,000-gallon centrifuge in Building 28. The experimental oil treatment

	system formerly had one 20,000-gallon steel-lined concrete holding tank and two 10,000-gallon USTs. Nonhazardous waste oil from throughout is received and treated by this unit.
Date of Startup:	Building 128 aboveground storage tank operations began in October 1991. Waste oil treatment operations began prior to 1960.
Date of Closure:	This unit is currently operational.
Wastes Managed:	This unit manages nonhazardous waste hydraulic, soluble, etna, and experimental oil from throughout the facility.
Release Controls:	Building 128 release controls include a 5-foot epoxy sealed berm 40 feet by 80 feet around eight 10,000-gallon steel tanks. Building 28 has a concrete floor with no visible cracks or gaps. The current underground tanks between Buildings 128 and 28 have no release controls. The former underground tanks between Buildings 128 and 28 did not have release controls.
History of Documented Releases:	No releases from this unit have been documented.
Observations:	PRC observed about 20 aboveground steel tanks. The visible portions of the tanks did not have any holes or cracks at the time of the VSI. PRC observed no visible evidence of release in Buildings 128 and 28. PRC viewed the cement between the two buildings but was unable to see the tanks because they are underground.
SWMU 2	**Waste Oil Drip Pans**
Unit Description:	These units consist of metal pans placed beneath wet grinding machines to collect waste oil (see Photograph No. 4). The pans vary in height and length depending on the size of the machine. There are about 1,000 machines with waste oil drip pans. A 700-

	gallon vac truck collects the oil and transfers it to the Waste Oil Treatment System (SWMU 1).
Date of Startup:	These units began operating prior to 1960.
Date of Closure:	These units are currently operational.
Wastes Managed:	These units manage nonhazardous waste oil from wet machining operations.
Release Controls:	These units are located inside buildings.
History of Documented Releases:	No releases from these units have been documented.
Observations:	Metal drip pans, some containing oil, were observed inside buildings with both concrete and creosote floors. PRC observed no visible evidence of release at the time of the VSI.
SWMU 3	**Waste Oil Tank**
Unit Description:	This unit is a 1,000-gallon aboveground steel tank located in the Building 64 Tank Farm (see Photograph No. 5). Nonhazardous waste soluble oil from engine cell testing is collected in the tank and transported to the Waste Oil Treatment System (SWMU 1) for treatment.
Date of Startup:	This unit began operation in 1990.
Date of Closure:	This unit is currently operational.
Wastes Managed:	This unit manages nonhazardous waste soluble oil generated during engine cell testing.
Release Controls:	This unit is located aboveground and is surrounded by a 4-foot concrete dike (see Photograph No. 5). Sumps in the containment area will pump any releases to a 10,000-gallon steel tank adjacent to the 1,000-gallon tank. The 10,00-gallon steel tank is for

secondary containment and has never been used. The containment area is also equipped with vapor sensors.

History of Documented Releases: According to the interim site investigation in 1991, soil and ground water contamination was found in the area of the Building 64 Tank Farm.

Observations: The visible portions of the tank did not have any holes or cracks at the time of the VSI. PRC observed no visible evidence of release.

SWMU 4 **Waste Etna Oil Collection Pits**

Unit Description: These units consist of about 10 concrete collection pits, each about 2 feet deep, beneath each RRRIM machine. The pits vary in length depending on the size of the individual machine. The units collect waste etna oil from RRRIM operations.

Date of Startup: These units began operations about 1981.

Date of Closure: These units are currently operational.

Wastes Managed: These units manage nonhazardous waste etna oil from RRRIM operations.

Release Controls: The units are located indoors.

History of Documented Releases: No releases from these units have been documented.

Observations: PRC was unable to observe these pits because of their location under the RRRIM machines.

SWMU 5 **300-Gallon Assembly Line Tank**

Unit Description: This unit is an aboveground 300-gallon steel tank located on the third floor of building 90, on the assembly line (see Photograph No. 6). The unit collects waste oil, gasoline, and brake fluid

	(D001, D018) from automobiles that did not pass final quality control (QC) procedures on the assembly line.
Date of Startup:	This unit began operation about 1983.
Date of Closure:	This unit is currently operational.
Wastes Managed:	This unit manages waste gasoline and brake fluid (D001, D018) from automobiles that did not pass final QC procedures on the assembly line.
Release Controls:	This unit is inside a building that has a concrete floor with no visible cracks or gaps.
History of Documented Releases:	No releases from this unit have been documented.
Observations:	The visible portions of the tank did not have any holes or cracks at the time of the VSI. No cracks or gaps were visible in the concrete floor. PRC observed no visible evidence of release.
SWMU 6	**Building 90 Fluid Fill**
Unit Description:	This unit consists of trenches and an approximately 500-gallon underground concrete separator tank in the assembly line area (see Photograph No. 7). Fluids, such as oil and gasoline, are put into new cars so they can be driven off the assembly line. Small amounts of waste fluids accumulate in the trenches. The trenches leading to the tank are sprayed with water; the water and fluid mixture accumulates in the tank. From this tank, the water and oil is either transported via vac truck to the Waste Oil Treatment System (SWMU 1) or shipped off site for treatment, depending on the waste's flash point.
Date of Startup:	This unit began operation in 1990.
Date of Closure:	This unit is currently operational.

Wastes Managed:	This unit manages wastewater, oil, and gasoline (D001, D018) from the assembly line.
Release Controls:	This unit has no release controls.
History of Documented Releases:	No releases from this unit have been documented.
Observations:	PRC was unable to observe the trenches because the assembly line was operational. PRC was unable to observe the tank because it is underground.
SWMU 7	**Former Tank 65**
Unit Description:	This unit was a 15,000-gallon underground fiberglass tank in Building 32 Tank Farm. It was used to accumulate waste gasoline (D001, D018), oil, and water from the Building 90 Fluid Fill (SWMU 6).
Date of Startup:	This unit began operation in 1984.
Date of Closure:	This unit was removed in 1990.
Wastes Managed:	This unit managed waste fluids containing gasoline (D001, D018), oil, and water from the Building 90 Fluid Fill (SWMU 6) for less than 90 days.
Release Controls:	This unit has no release controls.
History of Documented Releases:	No releases from this unit have been documented.
Observations:	PRC was unable to observe the former location of the tank because it was underground.

SWMU 8	**Former Tank 8**
Unit Description:	This unit was an 8,000-gallon underground steel tank, used to accumulate waste paint thinner (D001, D007, F003, F005) from fascia painting activities (see Photograph No. 8).
Date of Startup:	This unit began operation about 1976.
Date of Closure:	This unit has been inactive since 1988.
Wastes Managed:	This unit managed waste solvents (D001, D007, F003, F005), such as methyl ethyl ketone (MEK), xylene, and toluene, from fascia painting activities.
Release Controls:	This unit had no release controls.
History of Documented Releases:	An apparent leak was discovered in the tank on August 2, 1988. A preliminary investigation revealed chemical constituents present in the perched water and MEK-contaminated soil to a depth of 25 feet. Soils contaminated with xylene, toluene, and ethylbenzene were found above a depth of 18 feet. Because only one boring was able to reach a depth of 25 feet, information on and interpretation of the horizontal extent of contamination is minimal.
Observations:	PRC observed the aboveground piping apparatus for the tank. PRC was unable to observe the tank because it is underground.
SWMU 9	**Wastewater Treatment System**
Unit Description:	This unit is located in Building 69 and consists of two concrete underground wet wells, a bar screen, four sludge pumps, and two underground API separators. The unit treats about 500,000 gallons of wastewater per day. Process water is collected in an underground concrete wet well, screened to remove large solids, and collected in another underground wet well. From the second wet well, the water is pumped through one of four sludge pumps and then to one of two API separators to remove solids and oil.

	Solids are collected in a gondola and transported to the Building 22 Roll-Off Dumpster (SWMU 14) prior to disposal. The oil sludge is pumped to a cyclone, where water and oil are separated, and then to an underground holding tank. The water is decanted and pumped to the first wet well to be treated. The oil is removed by City Environmental of Detroit, Michigan (see Photograph Nos. 9 and 10).
Date of Startup:	This unit began operation prior to 1960.
Date of Closure:	This unit is currently operational.
Wastes Managed:	This unit manages process wastewater from throughout the facility.
Release Controls:	This unit is a completely closed system and is located indoors on a concrete floor.
History of Documented Releases:	No releases from this unit have been documented.
Observations:	PRC observed no visible evidence of release.
SWMU 10	**Fascia 3,000-Gallon Paint Thinner Tank**
Unit Description:	This unit is an aboveground 3,000-gallons steel tank surrounded by a 4-foot steel berm (see Photograph No. 11).
Date of Startup:	This unit began operation in 1991.
Date of Closure:	This unit is currently operational.
Wastes Managed:	This unit manages, for less than 90 days, waste paint thinner (D001, D007, F003, F005) from fascia painting activities.
Release Controls:	The unit is in a building with concrete floors and is surrounded by a 4-foot steel berm.

History of Documented Releases:	No releases from this unit have been documented.
Observations:	The visible portions of the tank did not have any cracks or leaks at the time of the VSI. PRC observed no visible evidence of release at the time of the VSI.
SWMU 11	**Bumper, Fascia, and Touch-Up Waste Paint Sludge Treatment Units**
Unit Description:	These units consist of concrete tanks, estimated at about 1,000 gallons, that collect wastewater containing paint overspray. Chemicals are added to the water, creating a nonhazardous waste paint precipitate sludge. The water is then filtered to remove the waste paint precipitate and reused. The precipitate sludge is collected in a hopper (see Photograph Nos. 12 and 13), transferred to the Paint Roll-Off Dumpster (SWMU 12), and removed to Granger Landfill.
Date of Startup:	These units began operation about 1980.
Date of Closure:	These units are currently operational.
Wastes Managed:	These units manage wastewater containing paint overspray and waste paint precipitate (D001, D007, F003, F005).
Release Controls:	All units are indoors on concrete floors.
History of Documented Releases:	No releases from these units have been documented.
Observations:	PRC observed no visible evidence of release at the time of the VSI.
SWMU 12	**Paint Roll-Off Sludge Dumpster**
Unit Description:	This unit is a 20-cubic-yard metal dumpster located outside the fascia paint room (see Photograph No. 14).
Date of Startup:	This unit began operation about 1980.

Date of Closure:	This unit is currently operational.
Wastes Managed:	This unit manages waste paint (D001, D007, F003, F005) generated during engine painting and routine heavy machine maintenance. This unit also manages waste paint precipitate (D001, D007, F003, F005) from bumper, fascia, and touch-up painting operations.
Release Controls:	The unit is on top of concrete and covered by a plastic tarp.
History of Documented Releases:	No releases from this unit have been documented.
Observations:	PRC observed no visible evidence of release at the time of the VSI. The concrete surrounding the unit did not have any readily visible cracks or gaps. The visible portions of the tarp did not have any rips or tears at the time of the VSI.
SWMU 13	**Dust Collectors**
Unit Description:	These units consist of 55-gallon drums placed beneath bead blast and shot blast machines to collect the resulting dust (see Photograph No. 15).
Date of Startup:	Bead blast operations began in 1985. Shot blast operations began in 1991.
Date of Closure:	These units are currently operational.
Wastes Managed:	The bead blast unit manages baghouse dust (D008) generated during gasoline tank assembly. The shot blast unit manages baghouse dust generated during engine remanufacturing and pump and valve repair. Engine remanufacturing baghouse dust is nonhazardous. Pump and valve repair baghouse dust is being evaluated.
Release Controls:	All units are inside a building with a concrete floor.

History of Documented Releases:	No releases from this unit have been documented.
Observations:	One 55-gallon drum was placed beneath each baghouse. The visible parts of the drums did not have any cracks or holes. PRC did not observe any visible evidence of release.
SWMU 14	**Building 22 Roll-Off Dumpster**
Unit Description:	This unit is a 20-cubic-yard plastic-lined metal dumpster located in the dock area of building 22 (see Photograph No. 16).
Date of Startup:	This unit began operation about 1970.
Date of Closure:	This unit is currently operational.
Wastes Managed:	This unit manages non-hazardous residue and filter paper from wet machining operations.
Release Controls:	The unit is plastic lined and inside a building with a concrete floor.
History of Documented Releases:	No releases from this unit have been documented.
Observations:	PRC observed no visible evidence of release at the time of the VSI.
SWMU 15	**Outdoor Scrap Metal Bins**
Unit Description:	This unit consists of 10 concrete bins about 20 feet by 20 feet and about 15 feet deep. Scrap metal from throughout the facility, most covered with oil, is placed in this unit.
Date of Startup:	This unit began operation prior to 1955.
Date of Closure:	This unit is currently operational.
Wastes Managed:	Scrap metal, most covered with oil, from throughout the facility.

Release Controls:	Drains in each bin lead to SWMU 16.
History of Documented Releases:	According to facility representatives, soil contamination was found beneath the bins.
Observations:	PRC observed rusted scrap metal and liquid in the bins at the time of the VSI.
SWMU 16	**Outdoor Scrap Metal Bin USTs**
Unit Description:	This unit consists of two underground concrete tanks of unknown dimensions adjacent to the Outdoor Scrap Metal Bins (SWMU 15). Waste liquid from SWMU 15 drains into this unit and is pumped via underground pipes to the Waste Oil Treatment System (SWMU 1).
Date of Startup:	This unit began operation prior to 1955.
Date of Closure:	This unit is currently operational.
Wastes Managed:	This unit manages waste liquid from the Outdoor Scrap Metal Bins (SWMU 15).
Release Controls:	This unit has no release controls.
History of Documented Releases:	According to the interim site investigation in 1991, soil contamination was found beneath the USTs.
Observations:	PRC was unable to observe the SWMU because it is underground.
SWMU 17	**Asbestos Dumpster**
Unit Description:	This unit is a 20-cubic-yard metal dumpster located outside, adjacent to the Hazardous Waste Storage Area (SWMU 19). Plastic bags of asbestos waste from remanufacturing of V-8 engines is placed in this unit (see Photograph No. 17).

Date of Startup:	This unit began operation about 1991.
Date of Closure:	This unit is currently operational.
Wastes Managed:	This unit manages plastic bags of asbestos waste from remanufacturing of V-8 engines.
Release Controls:	All asbestos waste is contained in 4-millimeter plastic bags, which are stored closed.
History of Documented Releases:	No releases from this unit have been documented.
Observations:	The dumpster was 75 percent full of closed plastic bags at the time of the VSI. PRC observed no evidence of release.

SWMU 18 **RRRIM Trenches**

Unit Description:	This unit consists of concrete, metal grated trenches, about 6 inches deep, which run the entire length of the RRRIM building (Building 78). Nonhazardous waste solids from molds are swept into the unit thoroughout three shifts and shoveled out at the end of the day. The waste put into 55-gallon drums, and placed in the Satellite Accumulation Areas (SWMU 21) (see Photograph 18).
Date of Startup:	This unit began operation in 1981.
Date of Closure:	This unit is currently operational.
Wastes Managed:	This unit manages nonhazardous waste solids from RRRIM operations.
Release Controls:	This unit is made of concrete and is indoors.
History of Documented Releases:	No releases from this unit have been documented.

Observations:	No waste was in the trenches at the time of the VSI. PRC observed no evidence of release.
SWMU 19	**Hazardous Waste Storage Area**
Unit Description:	This unit is an outdoor, roofed, 36-foot by 122-foot rectangular area (see Photograph Nos. 19 and 20). It is enclosed by three walls and is open on the south. Reinforced concrete epoxy-coated containment walls about 2 feet high surround the storage area. A 1,000-gallon steel UST at the northeast corner of the building collects spills and runoff. Waste is pumped into a tanker and transported to a licensed hazardous waste landfill. The unit stores 55-gallon drums of hazardous waste from throughout the facility. Drums are placed on pallets on a reinforced concrete epoxy-coated floor.
Date of Startup:	This unit began operation prior to 1980. The exact date is uncertain. It was enclosed and in its present condition in 1984.
Date of Closure:	This unit is currently operational.
Wastes Managed:	This unit manages baghouse dust (D008) from bead blast operations, baghouse dust from V-8 engine remanufacturing and pump and valve repair, waste paint thinner (D001, D007, F003, F005) from engine head and block painting, adhesive waste (D001) from remanufacturing of water pumps for V-8 engines and assembling of hoods, nonhazardous waste solids from RRRIM operations, waste solvents (D001, D007, F003, F005) from RRRIM and pump and valve repair operations, and formerly wastewater treatment sludge (F006) from zinc phosphating operations and SMC resin (D001, D006, D008, and D009).
Release Controls:	The unit is surrounded by reinforced concrete epoxy-coated containment walls about 2 feet high. The area is sloped to the northeast. A 1,000-gallon steel UST at the northeast corner of the building collects spills and runoff.

History of Documented Releases:	No releases from this unit have been documented.
Observations:	Drums were stacked four on a pallet, one pallet high at the time of the VSI. The visible portions of the drums did not have any holes. PRC did not observe any visible evidence of release at the time of the VSI.
SWMU 20	**Former Phosphating Operations Wastewater Treatment System.**
Unit Description:	Complete information on volumes and construction material for this unit is unavailable. Used zinc phosphating process waters were pumped to a 25,000-gallon underground concrete holding tank. This wastewater was then pumped to a reduction tank where sulphuric acid and sodium bisulfate were added. Next, the wastewater was pumped to a reaction tank where lime was added to remove the trivalent chromium, producing a hydroxide sludge. The sludge was then sent through a filter press. The filter cake waste was sent to a landfill, and the filtrate was sent to the Wastewater Treatment System (SWMU 9).
Date of Startup:	This unit began operating about 1962.
Date of Closure:	This unit has been inactive since about 1984.
Wastes Managed:	Wastewater and filter cake (F006) from zinc phosphating operations.
Release Controls:	Portions of the system were contained by underground concrete tanks.
History of Documented Releases:	No releases from this unit have been documented.
Observations:	At the time of the VSI, facility representatives could not conclusively determine where this unit had been located.

SWMU 21	**Satellite Accumulation Areas (SAA)**
Unit Description:	These units consist of 55-gallon drums and 2-cubic-yard hoppers used to accumulate waste at the point of generation before storage and disposal (see Photograph Nos. 21 through 26).
Date of Startup:	The SAAs for the V-6 machinery operations began operation before 1955. The waste paint SAA from routine maintenance and the waste paint thinner SAA from touch-up operations began operation before 1980. The adhesive waste SAA and the RRRIM SAAs began operation in 1981. The SMC purge resin SAA began operation about 1980. The pump and valve repair SAA began operation in 1989. The zinc phosphating wastewater treatment sludge SAA began operation about 1962.
Date of Closure:	All units are operational except the SMC purge resin SAA, which has been inactive since 1989 and the zinc phosphating wastewater treatment sludge SAA which has been inactive since about 1984.
Wastes Managed:	These units manage wet machining residue and filter paper, waste paint and paint thinner (D001, D007, F003, F005), dry machining chip waste, adhesive waste (D001), nonhazardous waste solids from RRRIM operations, and waste solvents (D001, D007, F003, F005). From about 1962 until about 1984 these units also formerly managed wastewater treatment sludge (F006) from zinc phosphating operations. And from about 1980 until about 1984 these units also managed SMC purge resin from plastic molding operations (D001, D006, D008, and D009). The plastic molding operations were conducted in the RRRIM building in approximately the same location were RRRIM operations are currently conducted.
Release Controls:	All units are indoors. All drums are kept closed when not in use.
History of Documented Releases:	No releases from this unit have been documented.

Observations:	None of the visible parts of any drums or hoppers had holes or cracks at the time of the VSI. PRC observed no evidence of release.
SWMU 22	**Bumper 300-Gallon Waste Paint Thinner Tank**
Unit Description:	This unit is a 300-gallon aboveground steel tank surrounded by 5-foot-high steel walls. The unit is located inside the RRRIM building.
Date of Startup:	This unit began operation in 1991.
Date of Closure:	This unit is currently operational.
Wastes Managed:	This unit manages waste paint thinner (D001, D007, F003, F005) from bumper painting operations.
Release Controls:	The unit is inside a building with concrete floors. It is surrounded by a 5-foot steel berm.
History of Documented Releases:	No releases from this unit have been documented.
Observations:	PRC observed no visible evidence of release at the time of the VSI.

4.0 AREAS OF CONCERN

PRC identified one AOC during the PA/VSI. This AOC is discussed below; its location is shown in Figure 2.

AOC 1 Facility Tank Farms

The BOC facility operates or formerly operated eight tank farms consisting of several underground storage tanks. Tank farms were or are used to store gasoline, diesel fuel, motor oils, and automatic transmission fluid. Several tank farms contained waste oil tanks. Facility tank farms include the following: 1) Central Tank Farm (see Photograph No. 27); 2) Building 64 Dock Tank Farm; 3) Building 64 South Tank Farm; 4) Tank 45; 5) Tanks 77 and 78; 6) East Tank Farm; 7) Tanks 49 and 50, and 8) the Building 66 South Tank Farm.

Between June 1989 and December 1990, the eight tank farms were investigated to characterize the extent of releases to soil and ground water. Investigations consisted of installing monitoring wells and collecting split-spoon soil samples at each of the 8 Tank Farms. With the exception of the Tanks 77 and 78 and the Building 66 South Tank Farm, perched ground water was encountered during drilling and temporary ground-water monitoring wells were installed for ground-water sample collection.

Soil samples from soil borings were analyzed for benzene, toluene, ethylbenzene, xylene (BTEX), total petroleum hydrocarbons (TPH), total lead, barium, selenium, chromium, copper, and zinc, and other VOCs. Soil sampling analysis indicated the presence of BTEX compounds (1 mg/kg to >100 mg/kg), TPH (71,000 mg/kg), total lead (1.0 mg/kg to 130 mg/kg), barium (5.9 to 81 mg/kg), selenium (4 mg/kg), and chromium (3.4 mg/kg to 28 mg/kg). Analysis of soil samples for other VOCs indicated the presence of VOCs (0.7 mg/kg to 15 mg/kg) at the Tank 45 Tank Farm and less than 1 mg/kg at the Central Tank Farm. Perched ground-water sample analysis indicated the presence of BTEX compounds (1 mg/L to 100 mg/L), TPH (nondetectable to 46 mg/L), and other VOCs (0.022 mg/L to 12 mg/L). Additionally, 1-inch of free petroleum product was observed at the top of the uppermost bedrock aquifer, near the East Tank Farm, about 60 feet bgs.

Between December 1991 and January 1992, the BOC facility conducted an area-wide investigation to further define the nature and extent of releases from facility

tank farms. Soil samples were collected during monitoring well installation, and ground-water samples were collected from the uppermost bedrock aquifer. Soil and ground-water samples were analyzed for VOCs, TPH, polynuclear aromatic hydrocarbons (PAH), and metals. Analysis of soil samples indicated the presence of VOCs ranging from chloroform, tetrachloroethene, trichloroethene, and ethylbenzene (1 µg/L) to xylene (7,700 µg/L); PAH [naphthalene (230 µg/kg)]; and metals ranging from cadmium (0.04 mg/kg) to barium (34 mg/kg). Analysis of ground-water samples indicated the presence of VOCs ranging from 1,1-dichloroethane, 1,1-dichloroethene, 1,2-dichloroethane, 1,2-dichloropropane, chloroform, ethylbenzene, trichloroethene, and trans-1,2-dichloroethene (1 µg/L) to xylene (2,700 µg/L); TPH (3,000 µg/L to 13,000 µg/L), PAH [naphthalene (54 µg/L); and metals ranging from cadmium (0.001) to zinc (4.1 mg/L). No further corrective measures have been taken.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The PA/VSI identified 22 SWMUs and one AOC at the BOC facility. Background information on the facility's location, operations, waste generating processes, history of documented releases, regulatory history, environmental setting, and receptors is presented in Section 2.0. SWMU-specific information, such as the unit's description, dates of operation, wastes managed, release controls, history of documented releases, and observed condition, is presented in Section 3.0. AOCs are discussed in Section 4.0. Following are PRC's conclusions and recommendations for each SWMU and AOC. SWMUs with suggested further action will be discussed first followed by those requiring no further action. Table 3 summarizes the SWMUs and AOC at the BOC facility and recommended further actions.

SWMU 1 **Waste Oil Treatment System**

Conclusions:

The probability of a release to ground water, surface water, and on-site soils from the portions of the unit located in Buildings 128 and 28 is low. These portions are located indoors, and a spill would not be likely to leave the buildings and migrate outdoors. The probability of a release to the air is low, because the wastes managed do not contain volatile organic compounds,

The potential of a release to ground water and on-site soils from the tanks that are and were located underground between Buildings 128 and 28 is moderate to high, because the tanks are or were underground with no monitoring devices. These tanks are most likely more than 15 years old and their integrity has not been assessed because they are located underground. The potential for release to surface water is low to moderate. Limited data based on regional geology and preliminary sampling suggests that ground-water flow is north-northeasterly away from the Grand River. However, surface topography and depth of ground water is in a south-southeasterly direction, and perched ground water may be in communication with the river. The Grand River may influence local ground-water flow. A release would have to migrate about 800 feet south via ground water to the Grand River.

The potential for release to the air is low, because the tanks are underground and did not contain VOCs.

TABLE 3
SWMU AND AOC SUMMARY

	SWMU	Dates of Operation	Evidence of Release	Recommended Further Action
1.	Waste Oil Treatment System	Prior to 1960 - present	None	No further action for the portions of the unit located in Buildings 128 and 28. It should be determined if a release occurred at the underground portions of the unit. If a release occurred, the extent of the release should be determined, followed by remediation of the contaminated areas.
2.	Waste Oil Drip Pans	Prior to 1960 - present	None	No further action at this time.
3.	Waste Oil Tank	1990 - present	Soil and ground water (perched ground water and bedrock aquifer) samples collected during 1989-1990 and 1991 investigations revealed the presence of VOCs, TPH, PAH (naphthalene) and metals in soil and ground water.	The extent of contamination should be determined, followed by any required remediation of the contaminated areas.
4.	Waste Etna Oil Collection Pits	About 1981 - present	None	No further action at this time.
5.	300-Gallon Assembly Line Tank	About 1983 - present	None	No further action at this time.
6.	Building 90 Fluid Fill	1990 - present	None	Soil and ground-water sampling should be conducted to determine if contamination is present. If present, the extent of contamination should be determined, followed by any required remediation of the contaminated areas.
7.	Former Tank 65	About 1984 - 1990	None.	Soil and ground-water sampling should be conducted to determine if contamination is present. If the current extent of contamination should be determined, followed by any required remediation of the contaminated areas.

TABLE 3 (Continued)

SWMU AND AOC SUMMARY

	SWMU	Dates of Operation	Evidence of Release	Recommended Further Action
8.	Former Tank 8	About 1976 - 1988	August 1988 preliminary investigation found chemical constituents in the perched water and MEK-contaminated soil to a depth of 25 feet. Soils contaminated with xylene, toluene, and ethylbenzene were found above a depth of 18 feet.	Conduct additional investigation to determine the extent of contamination. Once determined, conduct remediation of contaminated areas.
9.	Wastewater Treatment System	Prior to 1960 - present	None	No further action at this time.
10.	Fascia 3,000-Gallon Paint Thinner Tank	1991 - present	None	No further action at this time.
11.	Bumper, Fascia, and Touch-Up Waste Paint Sludge Treatment Units	About 1981 - present	None	No further action at this time.
12.	Paint Roll-Off Sludge Dumpster	About 1980 - present	None	No further action at this time.
13.	Dust Collectors	1985 - present	None	No further action at this time.
14.	Building 22 Roll-Off Dumpster	About 1970 - present	None	No further action at this time.
15.	Outdoor Scrap Metal Bins	Prior to 1955 - present	Soil and ground water (perched ground water and bedrock aquifer) samples collected during 1989-1990 and 1991 investigations revealed the presence of VOCs, TPH, PAH (naphthalene) and metals in soil and ground water.	Determine extent of contamination. Conduct any required remediation of contaminated areas.
16.	Outdoor Scrap Metal Bin USTs	Prior to 1955 - present	Soil and ground water (perched ground water and bedrock aquifer) samples collected during 1989-1990 and 1991 investigations revealed the presence of VOCs, TPH, PAH (naphthalene) and metals in soil and ground water.	Determine extent of contamination. Conduct any required remediation of contaminated areas.
17.	Asbestos Dumpster	About 1991 - present	None	No further action at this time.
18.	RRRIM Trenches	1980 - present	None	No further action at this time.

TABLE 3 (Continued)

SWMU AND AOC SUMMARY

SWMU	Dates of Operation	Evidence of Release	Recommended Further Action
19. Hazardous Waste Storage Area	Prior to 1981 - present	None	No further action at this time.
20. Former Phosphating Operations Wastewater Treatment System	About 1962 - about 1984	None	No further action at this time.
21. Satellite Accumulation Areas	Prior to 1980 - present	None	No further action at this time.
22. Bumper 300-Gallon Waste Paint Thinner Tank	1991 - Present	None	No further action at this time.

AOC	Dates of Operation	Evidence of Release	Recommended Further Action
1. Facility Tank Farms	Prior to 1955 to present	Soil and ground water (perched ground water and bedrock aquifer) samples collected during 1989-1990 and 1991 investigations revealed the presence of VOCs, TPH, PAH (naphthalene) and metals in soil and ground water. One inch of free petroleum product was observed at the top of the uppermost bedrock aquifer, near the East Tank Farm, about 60 feet bgs.	Advance additional soil borings to determine the extent of soil contamination. Install monitoring wells to establish the extent of contamination in the uppermost bedrock aquifer. Sample ground water for analysis of BTEX, TPH, VOCs, and metals.

Recommendations: No further action is recommended for the portions of the unit in Buildings 128 and 28. It should be determined if a release occurred at the underground portions of the unit. If a release occurred, the extent of the release should be determined, followed by any required remediation of the contaminated areas.

SWMU 3 **Waste Oil Tank**

Conclusions: This unit is a 1,000-gallon aboveground steel tank located in the Building 64 Tank Farm. The 1991 interim site report revealed VOC and metal contamination in the soil and ground water in the Tank Farm 64 area. The past potential for release to surface water is moderate. Limited data based on regional geology and preliminary sampling suggests that ground-water flow is north-northeasterly away from the Grand River. However, surface topography and depth of ground water is in a south-southeasterly direction and perched ground water may be in communication with the river. The Grand River may influence local ground-water flow. A release would have to migrate about 0.5 mile south via ground water to the Grand River.

The potential for release to the air is low because the tanks are underground.

Recommendations: Conduct additional investigation to determine the extent of contamination. Once determined, conduct any required remediation of contaminated areas.

SWMU 6 **Building 90 Fluid Fill**

Conclusions: This unit is underground beneath a building and has no release controls. The potential for release to ground water and on-site soils is moderate, because the tank is underground with no monitoring devices.

The potential for release to surface water is low to moderate. Limited data based on regional geology and preliminary sampling suggests that ground-water flow is north-northeasterly away from the Grand River. However, surface topography and depth of ground water is in a south-southeasterly direction and perched ground water may be in communication with the river. The Grand River may influence local ground water flow. A release

would have to migrate about 0.5 mile south via ground water to the Grand River.

The potential for release to the air is low, because the tanks are underground.

Recommendations: Soil and ground-water sampling should be conducted to determine if contamination is present. If present, the extent of contamination should be determined, followed by any required remediation of the contaminated areas.

SWMU 7 **Former Tank 65**

Conclusions: This unit was removed in 1990. It was located outdoors, underground in Tank Farm 32, and had no release controls. Past potential for release to ground water and on-site soils was moderate to high because the tank was underground with no monitoring devices. The past potential for release to surface water is low to moderate. Limited data based on regional geology and preliminary sampling suggests that ground-water flow is north-northeasterly away from the Grand River. However, surface topography and depth of ground water is in a south-southeasterly direction and perched ground water may be in communication with the river. The Grand River may influence local ground-water flow. A release would have to migrate about 0.5 mile south via ground water to the Grand River.

The potential for release to the air is low because the tanks are underground.

Recommendations: Conduct investigation to determine if contamination is present. If present, conduct any required remediation of contaminated areas.

SWMU 8 **Former Tank 8**

Conclusions: This unit has been inactive since 1988. It was located outdoors, underground, and had no release controls. Past potential for release to ground water and on-site soils was high. An August 1988 preliminary investigation revealed chemical constituents in the perched water and

MEK-contaminated soil to a depth of 25 feet. Soils contaminated with xylene, toluene, and ethylbenzene were found above a depth of 18 feet.

The past potential for release to surface water was moderate. Limited data based on regional geology and preliminary sampling suggests that ground-water flow is north-northeasterly away from the Grand River. However, surface topography and depth of ground water is in a south-southeasterly direction and perched ground water may be in communication with the river. The Grand River may influence local ground-water flow. A release would have to migrate about 0.5 mile south via ground water to the Grand River.

The potential for release to the air is low, because the tanks are underground.

Recommendations: Conduct additional investigation to determine the extent of contamination. Once determined, conduct remediation of contaminated areas.

SWMU 15 **Outdoor Scrap Metal Bins**
SWMU 16 **Outdoor Scrap Metal Bin USTs**

Conclusions: These units are outdoors. SWMU 16 is underground, below SWMU 15. According to the Interim Site Investigation in 1991, soil contamination was found in the area of these two SWMUs. The potential for release to on-site soils and ground water is high, because SWMU 16 is underground with no monitoring devices. The potential for release to surface water is moderate. Limited data based on regional geology and preliminary sampling suggests that ground-water flow is north-northeasterly away from the Grand River. However, surface topography and depth of ground water is in a south-southeasterly direction and perched ground water may be in communication with the river. The Grand River may influence local ground-water flow. A release would have to migrate about 0.5 mile south via ground water to the Grand River.

The potential for release to the air is low because the tanks are underground.

Recommendations: The extent of contamination should be determined and any required remediation of the contaminated areas should be conducted.

SWMU 2 **Waste Oil Drip Pans**

Conclusions: These units are inside a building that has a creosote block floor with no holes or missing blocks. The probability of a release to ground water, surface water, and on-site soils is low because the units are indoors, and a spill would not be likely to leave the building and migrate outdoors. The potential for release to air is low because the waste managed does not contain volatile organic compounds.

Recommendations: No further action is recommended at this time.

SWMU 4 **Waste Etna Oil Collection Pits**
SWMU 5 **300-Gallon Assembly Line Tank**
SWMU 9 **Wastewater Treatment System**
SWMU 10 **Fascia 3,000-Gallon Paint Thinner Tank**
SWMU 11 **Bumpers, Fascia, and Touch-Up Waste Paint Sludge Treatment Units**
SWMU 13 **Dust Collectors**
SWMU 14 **Building 22 Roll-Off Dumpster**
SWMU 18 **RRRIM Trenches**
SWMU 20 **Former Phosphating Operations Wastewater Treatment System**
SWMU 21 **Satellite Accumulation Areas**
SWMU 22 **Bumper 300-Gallon Waste Paint Thinner Tank**

Conclusions: These units do not pose a significant potential for release to the environment. The potential for a release to environmental media is summarized below.

SWMUs 4, 5, 9, 10, 11, 13, 14, 18, 21, and 22 are indoors on concrete floors. The probability of a release to ground water, surface water, and on-site soils is low because the units are located indoors, and a spill would not be likely to leave the building and migrate outdoors. The probability of a release to air is low, because wastes are stored closed at all times.

SWMU 20 is no longer active, and the unit's location is uncertain. The unit was most likely located indoors in concrete, because all active

buildings, except building 21, have concrete floors. The past potential for release to ground water, surface water, and on-site soils is low because the unit was indoors, and a spill would not be likely to leave the building and migrate outdoors. The past potential for release to air is low, because wastes did not contain volatile organic compounds. This unit has no future potential for release.

Recommendations: No further action is recommended at this time.

SWMU 12 **Paint Roll-Off Dumpster**
SWMU 17 **Asbestos Dumpster**
SWMU 19 **Hazardous Waste Storage Area**

Conclusions: SWMUs 12, 17, and 19 are located outdoors on concrete with no visible cracks or gaps. The potential for a release from SWMU 12 to all environmental media is low because the unit is kept closed at all times.

The potential for release to all environmental media from SWMU 17 is low because the asbestos waste is wet before being placed into plastic bags. All waste is inside closed plastic bags at all times.

The potential for release to all environmental media from SWMU 19 is low, because the unit is enclosed on three sides and has adequate secondary containment. Waste is stored in closed containers at all times.

Recommendations: No further action is recommended at this time.

AOC 1 **Facility Tank Farms**

Conclusions: These areas pose a high potential for release to the environment. The potential for release to each environmental medium is summarized below.

The potential to on-site soils is high because contamination of soils at all facility tank farm locations has been documented. Contamination may migrate to ground water because of soil flushing during rain events.

The potential for release to ground water is high because release of hazardous constituents to the ground water has been documented. BTEX

compounds, TPH, and other VOCs were detected in water samples from the perched water table during bedrock monitoring well installation. Soil borings from the 1989-1990 facility investigation penetrated perched ground water at depths ranging from 0 to 39 feet below ground surface (bgs). VOCs, TPH, PAH, and metals were detected in ground water samples from the uppermost bedrock aquifer during the 1991 investigation. One inch of free petroleum product was observed at the top of the uppermost bedrock aquifer about 60 feet bgs.

The potential for release to surface water is low to moderate. Perched ground water is likely in hydraulic communication with the Grand River, which borders the facility to the south and east. The upper bedrock aquifer may be in hydraulic communication with Grand River. Regional hydrogeologic data indicates a regional north-northeast ground-water flow; however, the Grand River may be locally recharged by the uppermost bedrock aquifer.

The potential for release to air is low. Some tank farms have been removed. Release of UST contents would occur below the ground surface.

Recommendations: Additional soil borings should be advanced to determine the extent of soil contamination. Additional monitoring wells should be installed to establish the extent of ground-water contamination in the uppermost bedrock aquifer.

REFERENCES

Asea Brown Boveri Environmental Services, Inc. (ABB), 1991. Site Investigation Plan, Buick-Oldsmobile-Cadillac Group (BOC), a division of General Motors Corporation, October.

ABB, 1992. Interim Site Investigation Report #2, February.

BOC, 1980a. Notification of Hazardous Waste Activity, August 7.

BOC, 1980B. RCRA Part A Permit Application, November 14.

BOC, 1983. RCRA Part B permit application, April 1.

E.C. Jordan Company, 1988. Preliminary Investigation of Waste Solvent Tank (Tank No. 8), GMC, BOC Group, Lad, Plant No. 1, Lansing, Michigan, August.

Flood Emergency Management Agency (FEMA), 1981. Flood Insurance Rate Map. Community-Panel Number 260090 0010B, March 2.

Michigan Department of Natural Resources (MDNR), 1985. RCRA Inspection Report, September 19.

MDNR. 1986a. RCRA Inspection Report, July 17.

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MDNR, 1989. RCRA Inspection Report, August 8.

MDNR, 1990. RCRA Inspection Report, May 18.

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National Weather Service, 1990. Telephone Conversation between Deb Harrity, PRC Environmental Management, Inc. (PRC), and National Weather Service at the Capital City Airport, August 5.

U.S. Department of Agriculture (USDA) Soil Conservation Service, 1978. Soil Survey of Ingham County, Michigan, October.

U.S. Environmental Protection Agency (EPA), 1984. Part B permit, February 29.

ATTACHMENT A

EPA PRELIMINARY ASSESSMENT FORM 2070-12

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
MI	MID 005 356 894

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO. OR SPECIFIC LOCATION IDENTIFIER				
Buick-Oldsmobile-Cadillac Group, a division of General Motors Corporation (Formerly GMC Plant 1)	920 Townsend Street				
03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Lansing	MI	48921	Ingham		
09 COORDINATES: LATITUDE 42° 43' 19" N | LONGITUDE 084° 33' 58" W					

10 DIRECTIONS TO SITE (Starting from nearest public road)
Interstate 496, exit Logan Street, south to Main Street. Turn left to Townsend Street.

III. RESPONSIBLE PARTIES

01 OWNER (if known)	02 STREET (Business, mailing residential)		
General Motors Corporation, Buick-Oldsmobile-Cadillac Group,	920 Townsend Street		
03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
Lansing	MI	48921	(517) 885-1155
07 OPERATOR (If known and different from owner)	08 STREET (Business, mailing, residential)		
09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER

13 TYPE OF OWNERSHIP (Check one)
☒ A. PRIVATE ☐ B. FEDERAL: _____ (Agency Name) ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL
☐ F. OTHER _____ (Specify) ☐ G. UNKNOWN

14. OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)
☒ A. RCRA 3010 DATE RECEIVED: 8 / 07 / 80 (MONTH DAY YEAR) ☐ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: ___ / ___ / ___ (MONTH DAY YEAR) ☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION
☒ YES ☐ NO DATE 02/11/92
BY (Check all that apply)
☐ A. EPA ☒ B. EPA CONTRACTOR ☐ C. STATE ☐ D. OTHER CONTRACTOR
☐ E. LOCAL HEALTH OFFICIAL ☐ F. OTHER: _____ (Specify)
CONTRACTOR NAME(S): PRC Environmental Management, Inc.

02 SITE STATUS (Check one)
☒ A. ACTIVE ☐ B. INACTIVE ☐ C. UNKNOWN

03 YEARS OF OPERATION
1902 (BEGINNING YEAR) | present (ENDING YEAR) ☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED

The substances present are primarily waste paint thinners, wastewater, waste oil, and waste machining residue.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

Methyl ethyl ketone, xylene, toluene, and ethylbenzene contamination is in ground water and in the soil. Petroleum hydrocarbons and other volatile organic compounds were also present in the ground water and soil. The facility continues to monitor wells and plans additional investigation.

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents.)
☐ A. HIGH (Inspection required promptly) ☒ B. MEDIUM (Inspection required) ☐ C. LOW (Inspect on time-available basis) ☐ D. NONE (No further action needed; complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)			03 TELEPHONE NUMBER
Kevin Pierard	U.S. EPA			(312) 886-4448
04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
Gabrielle Norkis		PRC-EMI	(312) 856-8700	02 / 11 / 92 (MONTH DAY YEAR)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
MI	MID 005 356 894

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES *(Check all that apply)*

- ■ A. SOLID
- □ B. POWDER, FINES
- ■ C. SLUDGE
- □ D. OTHER _____ *(Specify)*
- □ E. SLURRY
- ■ F. LIQUID
- □ G. GAS

02 WASTE QUANTITY AT SITE
(Measures of waste quantities must be independent)

TON _____

CUBIC YARDS 100

NO. OF DRUMS about 500

03 WASTE CHARACTERISTICS *(Check all that apply)*

- ■ A. TOXIC
- □ B. CORROSIVE
- □ C. RADIOACTIVE
- □ D. PERSISTENT
- □ E. SOLUBLE
- □ F. INFECTIOUS
- ■ G. INFLAMMABLE
- ■ H. IGNITABLE
- ■ I. HIGHLY VOLATILE
- □ J. EXPLOSIVE
- □ K. REACTIVE
- □ L. INCOMPATIBLE
- □ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE	1,300	Cubic Yards	Paint sludge
OLW	OILY WASTE	350,000	Gallons	
SOL	SOLVENTS	36,554	Gallons	Paint thinner, waste paint, adhesive waste
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES *(See Appendix for most frequently cited CAS Numbers)*

CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
	Trichloroethene	79-01-6	Drums		
	1,1,1-Trichloroethane	79-00-5	Drums		
	Methyl ethyl ketone		Drums/UST		
	Xylene	1330-20-7	Drums/UST		
	Toluene	108-88-3	Drums/UST		
	Benzene	71-43-2	Drums/UST		
	Ethylbenzene	100-41-4	UST		

V. FEEDSTOCKS *(See Appendix for CAS Numbers)*

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION *(Cite specific references; e.g., state files, sample analysis, reports)*

Asea Brown-Boveri Environmental Services, Inc. (ABB), 1991. Site Investigation, Buick-Oldsmobile-Cadillac Group (BOC), a Division of General Motors Corporation, October.

ABB, 1992. Interim Site Investigation Report #2, February.

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE: MT	02 SITE NUMBER: MTD 005 356 894

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ■ A. GROUNDWATER CONTAMINATION — 02 ■ OBSERVED (DATE: 12/91) — □ POTENTIAL — □ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 123,000 — 04 NARRATIVE DESCRIPTION

According to a 1991 Interim Site Investigation, perched ground-water sample analysis from 8 facility Tank Farms indicated the presence of benzene, toluene, ethylbenzene, xylene (BTEX) compounds, total petroleum hydrocarbons (TPH), and other volatile organic compounds (VOCs). Additionally, 1-inch of free petroleum product was observed at the top of the uppermost bedrock aquifer.

01 ■ B. SURFACE WATER CONTAMINATION — 02 □ OBSERVED (DATE:) — ■ POTENTIAL — □ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 123,000 — 04 NARRATIVE DESCRIPTION

Perched ground water is likely in hydraulic communication with the Grand River, which borders the facility to the south and east.

01 ■ C. CONTAMINATION OF AIR — 02 □ OBSERVED (DATE:) — ■ POTENTIAL — □ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 123,000 — 04 NARRATIVE DESCRIPTION

Any fires or explosion would cause emissions to the air of potentially hazardous constituents.

01 ■ D. FIRE/EXPLOSIVE CONDITIONS — 02 □ OBSERVED (DATE:) — ■ POTENTIAL — □ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 123,000 — 04 NARRATIVE DESCRIPTION

Based on the nature of waste solvents, there is a potential for the accidental ignition of solvents stored at the facility.

01 □ E. DIRECT CONTACT — 02 □ OBSERVED (DATE:) — □ POTENTIAL — □ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: — 04 NARRATIVE DESCRIPTION

01 ■ F. CONTAMINATION OF SOIL — 02 ■ OBSERVED (DATE: 12/91) — □ POTENTIAL — □ ALLEGED
03 AREA POTENTIALLY AFFECTED: 190 *(Acres)* — 04 NARRATIVE DESCRIPTION

According to a 1991 Interim Site Investigation, soil samples from soil borings indicated the presence of BTEX compounds and VOCs.

01 ■ G. DRINKING WATER CONTAMINATION — 02 □ OBSERVED (DATE:) — ■ POTENTIAL — □ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: — 04 NARRATIVE DESCRIPTION

None identified. Ground water is used as a source of drinking water. Two municipal wells are located east of the Grand River, about 3,300 feet east of the plant, upgradient of the facility.

01 ■ H. WORKER EXPOSURE/INJURY — 02 □ OBSERVED (DATE:) — ■ POTENTIAL — □ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: — 04 NARRATIVE DESCRIPTION

01 ■ I. POPULATION EXPOSURE/INJURY — 02 □ OBSERVED (DATE:) — ■ POTENTIAL — □ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 123,000 — 04 NARRATIVE DESCRIPTION

Fire or explosion could expose the population to a release of hazardous constituents. Contamination of drinking water could expose the population to hazardous constituents.

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE: MT	02 SITE NUMBER: MTD 005 356 894

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE:_____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None identified.

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE:_____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None identified.

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE:_____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None identified.

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES — 02 ☐ OBSERVED (DATE:_____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

None identified.

01 ☐ N. DAMAGE TO OFF-SITE PROPERTY — 02 ☐ OBSERVED (DATE:_____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None identified

01 ☐ O. CONTAMINATION OF SEWERS, DRAINS, WWTPS — 02 ☐ OBSERVED (DATE:_____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None identified.

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE:_____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None identified.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

None identified.

III. TOTAL POPULATION POTENTIALLY AFFECTED: 123,000

IV. COMMENTS

Moderate potential for release from 7 SWMUs.

V. SOURCES OF INFORMATION ***(Cite specific references; e.g., state files, sample analysis, reports)***

Asea Brown-Boveri Environmental Services, Inc. (ABB), 1991. Site Investigation, Buick-Oldsmobile-Cadillac Group (BOC), a Division of General Motors Corporation, October.
ABB, 1992. Interim Site Investigation Report #2, February.

ATTACHMENT B

VISUAL SITE INSPECTION SUMMARY AND PHOTOGRAPHS

VISUAL SITE INSPECTION SUMMARY

Buick-Oldsmobile-Cadillac Group
A Division of General Motors Corporation
(formerly GMC Plant 1)
Lansing, Michigan
MID 005 356 891

Date:	February 11 and 12, 1992
Facility Representatives:	Kurt Blizzard, Environmental Engineer (GMC Plant 1)
Inspection Team:	Gabrielle Norkis, PRC Environmental Management, Inc. (PRC) Peter Lynch, PRC
Photographer:	Peter Lynch, PRC
Weather Conditions:	Cloudy, 20°F
Summary of Activities:	The visual site inspection (VSI) began with an introductory meeting at 8:30 a.m. The inspection team began the meeting with a discussion of the purpose of the VSI and the agenda for the visit. Mr. Blizzard discussed the BOC facility's past and current operations, solid waste generation, and release history. Most information was exchanged on a question-and-answer basis with BOC representatives. Mr. Blizzard explained the facility's health and safety requirements and then gave the inspection team, a tour of the facility, including production and solid waste management areas, and he explained waste management practices. The first day's tour concluded at 5:15 p.m. The group re-assembled at 8:30 a.m. on February 12, 1992. Mr. Blizzard continued the tour of the facility. The tour concluded at 11:00 a.m. The inspection team held an informal exit meeting with Mr. Blizzard and the VSI was completed at 12:15 p.m.

Photograph No. 1 Location: SWMU 1
Orientation: Northwest Date: 02/11/92
Description: Waste etna oil is stored in a 50,000-gallon steel aboveground tank in building 128.

Photograph No. 2 Location: SWMU 1
Orientation: South Date: 02/11/92
Description: Area of two 50,000-gallon underground batch tanks between buildings 128 and 28.

Photograph No. 3 Location: SWMU 1
Orientation: Southeast Date: 02/11/92
Description: Insulated 700-gallon etna oil collectors in building 28.

Photograph No. 4 Location: SWMU 2
Orientation: West Date: 02/11/92
Description: Coolant oil from hydraulic units is collected in curbed metal waste oil drip pans directly under hydraulic units.

Photograph No. 5 Location: SWMU 3 and AOC 1
Orientation: North Date: 02/11/92
Description: Tank on right is the 1,000-gallon steel waste oil tank. Tank on left is an empty 10,000-gallon steel waste gasoline tank that has not been used.

Photograph No. 6 Location: SWMU 5
Orientation: South Date: 02/12/92
Description: An aboveground 300-gallon steel tank in building 90 collects waste oil, gasoline, and brake fluid generated during automobile assembly.

Photograph No. 7 Location: SWMU 6
Orientation: Southwest Date: 02/12/92
Description: Grated trench is under metal panels in background. Concrete separator tank is under yellow barrier in foreground.

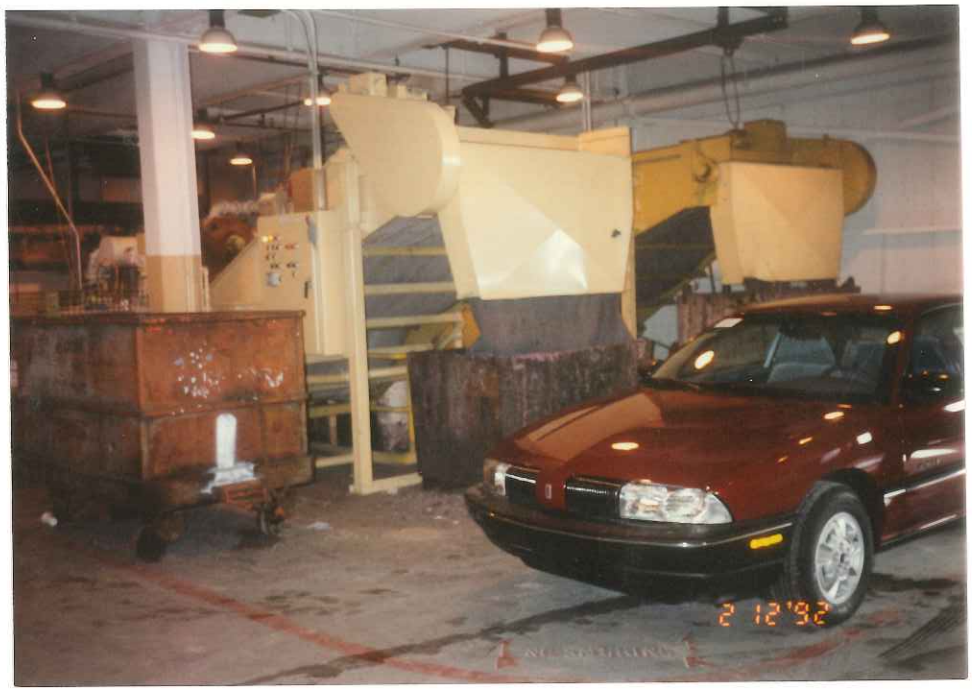
Photograph No. 8 Location: SWMU 8
Orientation: Southwest Date: 02/12/92
Description: Aboveground piping apparatus for Former Tank 8. The unit has been inactive since 1988.

Photograph No. 9 Location: SWMU 9
Orientation: North Date: 02/11/92
Description: Underground concrete wet well which initially collects pretreated water.

Photograph No. 10 Location: SWMU 9
Orientation: Southeast Date: 02/11/92
Description: Bar screen and roll-off dumpster collecting gross trash.

Photograph No. 11 Location: SWMU 10
Orientation: Southeast Date: 02/12/92
Description: Fascia 3,000-gallon steel tanks surrounded by a 4-foot steel berm.

Photograph No. 12 Location: SWMU 11
Orientation: West Date: 02/11/92
Description: Bumpers waste paint sludge treatment unit dumpsters collecting nonhazardous waste paint precipitate sludge.



Photograph No. 13 Location: SWMU 11
Orientation: Northeast Date: 02/12/92
Description: Touch-up waste paint sludge treatment unit dumpster collecting nonhazardous waste paint precipitate sludge.

Photograph No. 14 Location: SWMU 12
Orientation: West Date: 02/12/92
Description: Paint roll-off sludge dumpster covered with a plastic tarp.

Photograph No. 15 Location: SWMU 13
Orientation: North Date: 02/11/92
Description: A 55-gallon drum placed beneath the head blast machine to collect head blast (D008) dust.

Photograph No. 16 Location: SWMU 14
Orientation: South Date: 02/11/92
Description: Plastic-lined 20-cubic yard roll-off dumpster containing residue and filter paper from wet machining operations.

Photograph No. 17
Orientation: Northeast
Description: Bags of asbestos waste inside the asbestos dumpster.

Location: SWMU 17
Date: 02/12/92

Photograph No. 18
Orientation: North
Description: RRRIM trenches covered with metal grating in Building 78.

Location: SWMU 18
Date: 02/11/92

Photograph No. 19 Location: SWMU 19
Orientation: Northeast Date: 02/12/92
Description: 55-gallon waste drums staged in the Hazardous Waste Storage Area.

Photograph No. 20 Location: SWMU 19
Orientation: Northeast Date: 02/12/92
Description: The area of the 1,000-gallon steel underground storage tank (UST) at the northwest corner of the Hazardous Waste Storage Area.

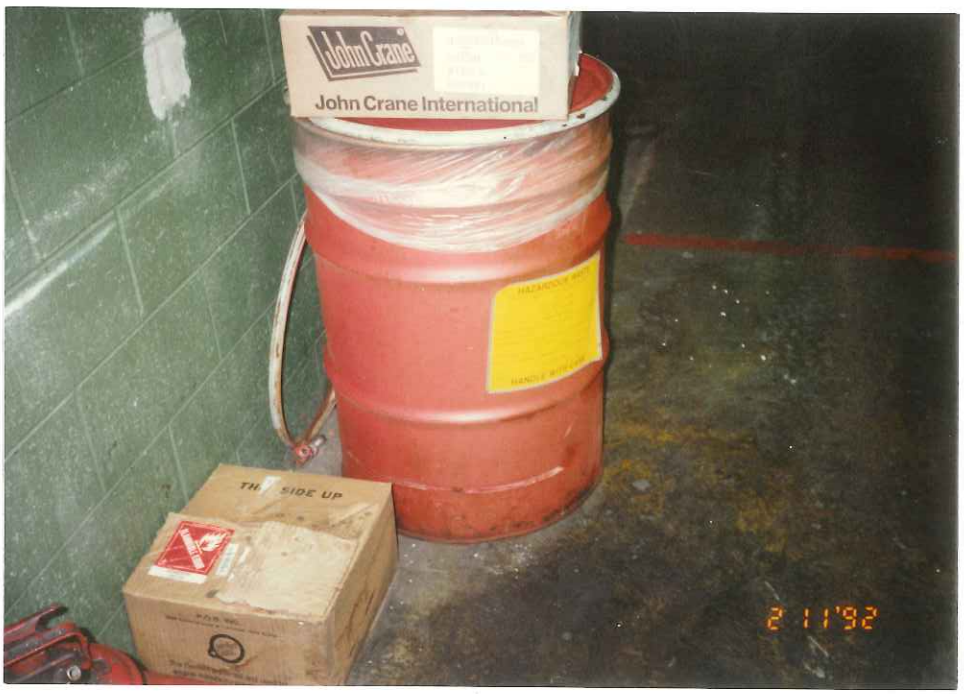
Photograph No. 21 Location: SWMU 21
Orientation: Northwest Date: 02/11/92
Description: Wet machining residue and filter paper from 6-cylinder (V-6) machining operations.

Photograph No. 22 Location: SWMU 21
Orientation: Southeast Date: 02/11/92
Description: A hopper of waste paint and filter paper from V-6 engine head painting.

Photograph No. 23 Location: SWMU 21
Orientation: East Date: 02/11/92
Description: A 55-gallon drum of waste paint from routine heavy machine maintenance.

Photograph No. 24 Location: SWMU 21
Orientation: East Date: 02/11/92
Description: A hopper of dry machining chip waste from V-6 machining operations.

Photograph No. 25 Location: SWMU 21
Orientation: Northwest Date: 02/11/92
Description: Two 55-gallon drums of nonhazardous waste solids from RRRIM operations collected from the trench in the foreground.



Photograph No. 26 Location: SWMU 21
Orientation: Northwest Date: 02/11/92
Description: A 55-gallon plastic-lined drum of adhesive waste (D001) from engine remanufacturing operations.

Photograph No. 27
Orientation: Southeast
Description: Unused tanks in the Central Tank Farm.

Location: AOC 1
Date: 02/12/92

ATTACHMENT C

VISUAL SITE INSPECTION FIELD NOTES

2/11/92

PA/UT

GMC - OLDSMOBILE PLANT I

MID

PRC

(1:34) Inspectors Lynch + Mosher meet Bligh and Warbrick at Plant 1.

weather cloudy, 35°F

(1:00) Isaac Powers WWTS supervisor for Bldg 128 vac + sucks liquid waste out of bldg 128 pumped into Sewer Tank (100,000 gal Monitoring tank)

Peter Lund 2/11/92

Mostly oil in waste oil tanks
- in waste oil tanks etc
cleaned. Sent back
to cooker & then centrifuged at 12%
put in Reclaim
tanks (10,000 gal),
then sent out.

Mostly sol. oil/water
- to batch tanks
2 50,000 gal UST.
Concrete tanks.
Bldg 28 - then chemical treated:
2 polymers + alum.
- emulsion breaks
alum - PPT. $AlCl_3$
- flow into DAF → float oil out of
water
Collect sludge after
Peter Lund 2/11/92

- air filtration.
→ Get waste oily sludge
sent to 2. 10000 waste
oily sludge Tanks
Decant water, skipped
out.
→ water back into
batch tanks.
water treated and
discharged

Systems
- Storm - River
- San - city
- Process - API separators-Cat

Oil treatment
- reclaim waste oil
- oil from wastewater
Peter Lund 2/11/92

reclaim hydraulic oil
→ all water from
these treatments
goes to bldg 69
then city

API separator
- rectangular settling
tank.
- removes settleable
solids, floating
solids
- scrapes solids off
- uses gravity.

Bldg 128
- holding bldg
- truck + load systems
- valves, concrete floors,

Peter Lynch 2/11/92

wants put in to deal
w/ Enzine plant waste
- pump stations sending
waste in overhead piping
systems.
- hydraulic oil

- Tanks
Dirty waste oil Tanks
THO2 - from Rover 10,000 g.
THO3 - decanted

Waste ~~Eth~~ oil (7400 T401)
- water, glycol, oil
- 10 000 gal
- from bldg 52
- injection molding
- hot process, uses
ethylene glycol

Peter Lynch 2/11/92

(38)

- goes into 2 sump at 0934
Day tank, then
transfered to T401
T402 at 0935
- decanted, then
water to batch tank
- glycol, ~~oil~~ equal
to ethyl oxides.
after cooken send
back for re-use
via steel tote bins

waste sludge T401, T402
Redam oil T403

All tanks in series

Peter Lynch 2/11/92

(37)

Phase 1 Roll 2, NE T402
Early waste oil tanks

Phase 2, SE T403
- Redam oil tank

Phase 3, NW T401
- Waste glycol tank

Phase H1 SW T407
- Waste Sludge Tanks.

System in Bldg 12
started up in Oct 1991

Cleaning known for bldg 74

Peter Lynch 2/11/92

Due South bldg 28
2 5000 gal batch
tanks

0946 Photo 5, N.
2 50000 gal VSTs
Batch tanks

0942 Photo 6, S @ bldg 28
~ 10,000 Elmo oil + ~~waste~~ oil
~ 30,000 VST tank locations
- grating drains inside
sludge tanks inside
bldg 28.

Bldg 28
- Ranks deliver waste oil
to 100 gal tank.
- Can be sent to sludge,

Peter Lynch 2/11/92

waste oil, or
Elmo oil is off loaded
to Day tanks.

Photo 7 SE
Elmo oil Cookers
700 gal

Photo 8, NE
- left - Rover Delivery
- Right - Centrifuged
Plate separator

Elmo oil
- after cooking, water
is decanted, oil is
stored in cutting oil
Tank. (T-9)
5,000 gal
then piped to Elmo

Peter Lynch 2/11/92

(42)

oil filters

china oil filters: can be
removed every 7 years
- mixed with machine
residue → changes pH
Air filter - scrubber
- scrubber is cleaned
with water + water
goes to batch tanks

Waste oil system
- pumped from bldg 128
to coolers
- goes to holding tanks
- to spin centrifuge
- to reclaim day tanks
- then to Reclaim tanks
in bldg 128
Peter Lund 2/11/92

(43)

Photo 9, SE
- waste oil coolers
T-1 → T-4
- 750 gal

Photo 10

Photo 11, ~~SE~~ NE
- waste oil storage
T-5, T-6 1000 gal
centrifuge in foreground

all trenches direct flow to batch tanks.

Peter Lund 2/11/92

(44)

@ Bldg 64
Process Sewer
- gets ww with bits of oil / rinsewater from pans, ~~etc~~ gas bath treating water, roof runoff.
- 72" Process Sewer - wet well
- passes through a grating to remove gross chunks.
- into another wet well
- thru 4 pumps
- thru 2 API separators
- then a Cyclone + Auger
Solids dropout augered into a storage container
- water back into system

Peter Lynch 2/11/92

treats 500,000 gal per day.
oil hauled by tanker as RCRA waste by City Environmental Retrieval

1972 Photo 12 showing SE
- Cyclone & Auger Roll-off box left
- Right - roll off box collecting grass trash as process ww

1976 Photo 13 bldg 64 NW
- wet well. Bar screen in to right.
wet well under grating

Peter Lynch 2/11/92

(45)

(46)

Bldg 64, North Bldg 61

1031 Photo 14, North Bldg 64, NE
- oil & Rummel at Roll
5 Rummels

1048 Group began tour at
Manufacturing Areas
PRC requested total tour of
Processes generating
soluble oil.
met Rosann Mace
Area Env. Engineer

tour began Bldg 22

PRC asks about what made here
V-6 assembly Primary
with pumps
Peter Lynch 2/11/92

(47)

V-8 tenure practices
engine re-work
support facilities
- maintenance
- m/m each area and
components

PRC requested both old + new

No more V-8, stopped 4/90
- area currently used
for lead storage now

At Bldg 22 - Containing
- drilled coolant on
machining is returned
1107 → Photo 15, NE

* PRC notes grease used
Peter Lynch 2/11/92

(48)

Block floor along perimeter of bldg

Camshaft etchant
- waste flushes to holding tank
- manifested as waste etchant
- cleaned and empty 4 drums
- sent to Mark Risp(?)

Camshaft Machining
- curbed areas underneath drain to a sump. Pumped into drums → to bldg 128

1116 Photo 16, west
Bldg 27 - Camshaft
Peter Kmich 2/11/92

(49)

machining - Bay 6A
- curbed area called coolant oil drips. grating set up as sump.

1121 Photo 17, NW
- used coolant flushes, Paper
→ PEC meter a sanitary sewer approx 30 feet SE of this unit.

1127 Photo 18, SE
- Rover, Vac Truck, on sludge Kung
300 gal

Peter Kmich 2/11/92

(50) 1131 Photo 19. S,
22-A Sludge Dock
- Sludges generated and pumped + piped back to oil Recon - bldg 28
- dumpster 20 cu yds
- plastic lined
- machining residue, filter paper -

Paint spray booth
- waste thinner, waste paint sludge
- Paints V-6 heads
waste paint sludge

1141 Photo 20. NE
- cabinet holding waste thinner

Peter Rusch 2/11/92

1142 Photo 21 SE
waste paint sludge hopper from paint booth.

filter paper
- mask (protects areas not for painting) paper -

1145 Photo 22 SE

Baghouse dust collection from all processes on V-8 line: age?

1149 Photo 23. W
- Baghouse
- 2 55-gallon drums

Peter Rusch 2/11/92

(52) 1153 Photo 24, NW
55 Gallon drum HW
adhesive used on
V-8 water Pump
Service part mfg.
- no secondary containment
- called "Perfect Seal"

~~Photo~~ (51)

1200 Group lib lunch
1240 - Scrap metal from
dry machining of
Engine blocks
- no coolant -
1242 Photo 1, Roll 3 E
Scrap metal hopper
from dry machining

1245 Photo 2, E
wash water filter ±
Peter Kunch 2/11/92

(53)
collection hopper from
Parts washing.

1247 Photo 3 E
Parts washer

Entering Engine
Re-manufacturing
- used cores from
dealers
- re-cleaned, fixed
up engines for
resale
- currently accumulated
waste streams
in less than 1 year.
Paint Booth
- filters will become
waste.
Peter Kunch 2/11/92

P LOCTITE waste.
55 gal drum of
Loctite is emptied
by a press pushing
down inside lined
drum.
when press reaches
bottom, liner is
removed + placed
in an adjacent 55
gallon drum.
- This drum is labeled
as non-h.w.

shop waste
P 55 gal. drum of
unidentified waste
- not enough yet
to analyze.

Peter Lynch 2/11/92

P Baghouse
- Shot Blast
- cleans metal
parts
- re-circulated
when too small
are sent through
baghouse
- currently have
four drums.

P Asbestos waste - SAA
- gasket from old
engines
- accumulated in
4 mil poly bag
- goes to roll off box
upstairs for ACM waste

Peter Lynch 2/11/92

(56)

Pump + Valve Repair
- 2 55-gal drums

~~of HHP~~

1 drum waste Paints
1 TCE solvent Pool
1 drum spent 111 TCE

1312 Photo 4, N Pump Valve Repair
SAA - Right drum - 111 TCE
Left drum waste Paints
TCE solvent -

Maintenance Paint Spray
Booth Area Bldg 35
Bay 2A
waste Paint rethinner
(misc.)
- one waste drum

Peter Lynch 2/11/92

(57)

Photo 5 E, SAA
Maint Paint Spray
Booth Area

-

V-6 Engine Assembly
one location
has adhesive grease
areas (7 drums)

- outside scrap metal
concrete in ground
pits
- formerly were -

- soil remediation soil
drums investigation

Peter Lynch 2/11/92

(58)

1332

Bldg 69 Tank Farm
- waste oil (1000 gal)
from Engine Test Cell
Pumped out via vac
truck. Transported
to Bldg —
- also. waste gas tank
(10,000) for the C
spills

Photo N, Bldg 69 Tank Farm
- Small tank on ~~left~~ right
is 1000 gal waste oil
- Large tank on left
10,000 gal waste gasoline
- Diked 4' - concrete
floor.
-
- Pumps in containment

Peter Lynch 2/11/92

(58)

Have Vapor Recovery
Gas or oil → Waste Gas tank
- Rainwater → process
sewer → bldg 69

1349 Group assembles
in conf. room
meet Chuck Castle
Facilities Engineer
(Pipe 3)

→ Gas Tank Assembly.
(Bldg 38).
- soldering + welding
waste
- hw stream
- bead blast residue
EP Tox D008 (Leach)
- preparation for
welding on a gas tank

Peter Lynch 2/11/92

- accumulates in 55 gal drum also bottles.

Adhesive liner in Bldg 27B
- still use some 3M mastic (2001)
- switching over
- for hood mfg (car)
- Doors inner + outer panel of hood w/ adhesive
- Loctite

late 1970's RRIM Bldg 77, 78
- reinforced Rxn injection molding
- bumper, car interior

waste
Peter Rumch 2/11/92

- waste paint + thinner
- Paint sludge
- Poly tub, Isocyanates
→ Containment trenches inside RRIM area
- water - Rinse truck to Bldg 28
- Cyanite ~~or~~ Poly - shipped via vac. truck to City Environment of (Detroit)
- Solids periodically shovelled.
  - drummed, sent as non-HW
  - stored in HW storage
  - sent somewhere as HW (because mix

Peter Rumch 2/11/92

with listed
waste solvents.
Hay - Petroclean (Def)
Nan-Hw - City Env (Def).

Parts Cleaner
- approx 100 washers.
Prior to Enecleam, used
Safety Kleen (1985)
Before Safety Kleen,
no system, waste
was drummed & shipped
off-site.

Before Injection molding
- Chrome bumpers.
Plating (Chrome)
ended late 70's.
Plating occured in Bldg 18
Peter Lynch 2/11/92

Bandcrete - Bldg 37
- Painting - dip Rack
Parts.
- during Part B
Prep., considered
treatment.
- used as a primer.
would paint over it

Last bldg - 1984

WWII -
- converted for
gun + casings use

RR Iw
- separate parts cleane
methylene Chloride
- usually tank.
Peter Lynch 2/11/92

(64)

- use to clean pumps from Isoparaffin & Poly. processes
→ to HW storage
→ to Petrochem
→ reused in SAA

Eastern ~~Tank Farm~~
Central Tank Farm
- waste paint thinner accum. tank. above gr.
→ currently on 3000 gal. above gr. tank

RPI in waste Paint Thinner into a gal. tank
Pumped into drums.

Peter Lynch 7/11/92

(65)

PRC requested a copy of UST release / Site Survey report + last groundwater sample result in early March.

1519 Group arrives @ RPI to waste from trenches transferred out.

1521 Area 7, NW RPI in 2 non-leaking 55 gal drums of transferred trench waste.

1529 Trenches (Area 3, N)
1) Isopar - water, on water
Poly (peroxide)

Peter Lynch 7/11/92

(66)

(2) Debris

Waste Paint Sludge
- application guns are purged w/ Reire isocyanate.
- into 55 gal drums sent to HW → Pelletron (non Haz.)

RRTM Paint mix Room
- waste paint + thinner 300 gal.
- surrounded by steel walls - 5' high
- also has a drum used for accumulation of waste paint + thinner & walkway pads.

Peter Kinch 2/11/92

(67)

Second floor RRTM
- washer
- waste → Bldg 28

Spray Booth
- excess spray enters water
- goes to treatment system
- Paint solids are settled. water re-used.
- add CO

Yellow closet - SAA.
gravity feed to tank on 1st floor.

Peter Kinch 2/11/92

1552 (68) PHOTO 9. West

Paint Booth Water Treatment

- Built-up Water
- Drag-out conveyor water thru filter, filter paper into a hopper
- Drag out conveyer Paint Sludge / Paint booth residue into hoppers

→ to a 20 cu yd roll off per → Solidification facility → Envirite of Ohio

2 units (West, East)

Plant 1 Paint WWTS

- 2 Lin Rinses
- 1 Lin Pretreatment
- 1 Lin Fascia

Peter Lynch 2/11/92

(69)

1 in Bldg 150

→ to Bldg 69 for treatment

Bead Blast Bldg 77 GAS TANK

PHOTO N 1605

(contaminated Plastic Blast cleaning media)

- Cyclone unit collects dust into a 55-gal. drum. Drum Door
- filters when changed, go into drum.
- Much Susp. or Chem Ret were 6 bead blast operations. Now 3

→ San Sewer 3 of 4 ~~from Plate~~ (?) South #1 unit

After bead blasting, washed (now to Bldg 69) then welding.

Peter Lynch 2/11/92

(70)

2nd floor
- copper molding w/ electricity
- copper wheels accumulated re-faced

3rd floor
Maintenance Shop - Paint
RR in chemical Pump repair
Methylene Chloride
Parts washer.
Accumulated in pan / drum system. Then transferred to black 55 gal drum - outside
water layer
faced maintenance shop
Retrieved + sent to HW area.

1622 Photo 11, E
PRC requested volume of Meth. Chl. yr.
Peter Lynch 2/11/92

(71)

Garage in Bldg 37
- former hazardous area (NW corner)
currently industrial truck maintenance

Bldg 21B
Cadillac Hoist Assembly
3M mastic application.
only 2 workers in plant 1 in fact 3M is used
empty drums on pallets - 5
- One drum full of crud
Green - no HW label.

1649 Photo 12, W
- in foreground - empty 3M mastic drums. Drum on left is filled w/ liner + no label (HW)
- in left background are
Peter Lynch 2/11/92

(72)

3 drums in use hooked up to applicator
→ a drum to left of applicator is also used for liner accum.

1645 Group reassembles in conf. room. Outlines remaining tasks.

1710 PRC inspectors sign out & leave site.

Peter Lynch 2/11/92

2/12/92

(73)

0810 Inspectors Lynch + Noakes arrive at Plant 1. Group (Valverde, Bligard) convene in conf. room + prepare to train remainder of facility.

weather: sunny, cold 15°F, NE winds.

Plant 1 HW Surface Accum Storage Area

- concrete floor (cracked + pony) trenches on 2 sides, floor slopes to NE corner
- 1000 gal UST (steel) outside to NE corner collects spills, runoff
- bldg open on South side

Peter Lynch 2/12/92

74

2' concrete dike bounds
storage area
- drums stored 2-high.
- Conrail tracks immediately
adjacent on south.
- on south, concrete
dike is 10" high on SW
and 3" on SE
- [illegible] open area w/
curbing + trench → [illegible]
(1984), covered area
- Same drums stored since
1989
Photo 13 NE
- [illegible] [illegible] [illegible]

Photo 14 E

Peter Lynch 2/12/92

75

[illegible] [illegible] [illegible] [illegible].
[illegible] was [illegible] in

[illegible] tank [illegible]
- [illegible] gal waste paint [illegible]
not in use + plan to
[illegible] up [illegible] [illegible] [illegible]
[illegible] [illegible] paint
also
20,000 gal. waste gasoline
[illegible] [illegible] control
- Separate areas
- flammables } separate
corrosives } containment
- [illegible]
- Waste oil [illegible] gal.
[illegible] [illegible] [illegible]
Constructed - 1990

Peter Lynch 2/12/92

(76)

904 Photo 15, SE
- 6000 gal. concrete
Paint thinner tank

Tank has been in use since containment
consisting of a 9000 gal
epoxy coated concrete
vault.

0900 Photo 16 SW
location of UST #8
- scheduled for removal

* - began operation

902 Photo 17, W
- 2000 gal. bbl rolloff box
since 1989 has waste paint sludge
from all of Plant 1
before 1989 went to wastewater

Peter Rusch 2/12/92

(77)

(relocated in 1993) - PCB transformer in right background.

(transformer PCB removed) PCB cont. transformer in left background.

FASCIA PAINTS

908 Photo 18, S
- filter & sludge hopper
- Rating on left in Paint booth water circ. pit.

912 Paint Thinner box Photo 19 W
- open
- used to clean misc equip

Peter Rusch 2/12/92

(78)

Fascia Paint Mix Room — 920

Photo

- 3000 gal steel waste Thinner tank.
- upright
- steel
- Secondary cont: 4' metal panels, concrete floor. Some cracks observed inside contained area.
- grated trench 6' away, outside contained area. Trench has no drain "Blind Sump"
- date of start up ~ 1991 spring (after Tank 8)

Peter Rusch 2/12/92

(79)

Photo 19, SE

- Fascia Paint Mix Room Thinner
  metal panels and sec. containment
- Paint mixing machines are in background.

U37 Tank #8

- Discontinued late '89.

follow guide

Bay Assembly Bldg 90 Sand water Separator tank, full area

- Trench system
  - regularly flushed w/ water

after spills are cleaned up

Peter Rusch 2/12/92

(80)

Pumped to T 65 @ Bldg 32 Tank Farm.
- water added to tank to separate out - push out over divider.
water is recirculated.
when unusable, daily side is flushed, sent to either bldg 28 or bldg 90 (via Rover if flash pt is ≥ 140°
If ≤ 140, off-site
- Plan to implement ~~& start to run~~
- This unit beg. an operation in ~~to~~ 90 late 1983
- Previous, spills were diverted to "B" Underground tanks and handled by spill response

Peter Kunch 2/12/92

(81)

0945 Pump to 20 SW
- Fluid Bill Area
- graded trench in background
- tank in depressed area in foreground

at other liquid fill areas, drain to process sewers (antifreeze, etc.)

other waste in Bldg 90 include drums w/ residue of sand or water. Drums are removed as haz. waste (flammable) if residue is greater than what drum reclaimer will take

Peter Kunch 2/12/92

1005 Photo 21, 5
- waste oil at Brake
Shoe Accum - Tank.
- Steel
- drained by vac truck
to Bldg 28.
300 gallons
- for maintenance of
vehicles off line.
- Date of startup 1983(84).
- Prior, Dunns Contracts
Assembly,

621 Bldg 150 Final Repair
1023 Photo 21 NE
- Paint sludge
- WWT is in background
- sludge hoppers sent
to rolloff box
Peter Lynch 2/12/92

- manifested as non haz
(considered liquid
industrial waste).
- Some Valves observed
around base of hoppers

- all sludge goes to
(Leaving) Schultz oil for
solidification Prior
to Granger L.F.

1015 Group reassembles in
Bldg 60 conf. Room
for closing mtg.
met Gary Beszak
Env mgr, Facilities Engineering

Gabrielle outlines for
Gary Purpose of VSI
Peter Lynch 2/12/92

(84)

Surrounding neighbors

N - residential + commercial

S - Railroads (conrail) parks
- Board of water + Light. (MMPL utilities)
- River
- Residential, school

E - Scott Park
- River
- ~~Rest~~ Residential,
Spartan air (warehouse storage),

W = Residential, commercial

PRC. GMC agrees addl info will be at PRC in 2 weeks.

1200

GMC asks about draft/
Peter Lynch 2/12/92

(85)

final report. PRC says GMC can request a copy of report from U.S. EPA, Region 5.

GMC asks how report is used. PRC says not as CEI, rather, a verification of closure.

GMC asks about PRC recommendations. PRC says PRC's are just recommendations EPA may make changes for final determination

meeting ends. PRC inspectors sign out + leave facility

Peter Lynch 2/12/92

①

2-11-92

Received at 8:50 am
for PA/USE ~~for~~ for Plant 1.
Cold, overcast, windy 30°F
Building 128. Kurt Blizzard, Jean Lewis
Rich Ryczek, LeRoy Vahovich,
Using a portable vac pump waste
~~oil~~/water to 1000 gal trans tank
(steel). Mostly hydraulic oil
① put into waste oil tank
decant it thru gravity,
(700 gal est) store in waste
cool it, centrifuge it, put
into day tank, put into reclaim 10,000
gallon steel tank.

gets pumped direct ② if mostly soluable ~~water~~ oil
⇦ + water ⇨ to 2,50,000
~~storage~~ underground concrete
batch tanks. @ add ~~&~~ emulsion
polymers and alum and add
↓
precipitate

a flocculation polymer. Run it thru ②
dissolved air flotation & causes
oil to float then get a waste
oily sludge, skimmed off top &
pumped into a 10,000 gal
steel holding tank. ~~Decant the~~
~~water off the sludge (the goes into~~
~~the tank tank for building 69. sludge~~
~~out~~ Sludge sits in tank
① have storm sewer system to sewer
② sanitary system to Lucas
③ process to building 69
④ to corp
⑤ only waste system
⑥ reclaim hydraulic oil
⑦ " waste oil
⑧ truck oil out of waste
water
all water from or
to to building 69 ~~before~~
for treatment prior to discharge

(8)

ADR operator ⇒ settling tank ⇒ oil floats, sludge falls gets scraped. Clean off oil + sludge.

⇒ water goes to bottom + sludge to top. Water w/ sludge goes thru treatment again. Sludge out the door.

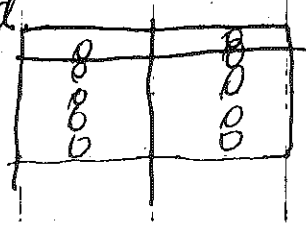
air system
⇒ Waste Etna Oil

Operator ⇒ from building 52 injection molding ⇒ hydraulic oil that has Ethelene Glycol + water in it. Picked up by special Roper truck from a pit under machines. Put into ~~10,000~~ 250 gal day tank. Then pumped to one of 2 10,000 gal steel tanks. Decant water + el. glycol ⇒ goes to batch tanks for other treatment. Goes to special Etna oil coolers, ~~filtered~~ filtered and sent back to line for re-use.

Norlin 2.11.92

(9)

10 tanks ⇒ 8 waste 2 product all 10,000 gall. ~~2~~ Wall in middle. Product wall separate. 5 feet deep. drained to pumps. Epoxy sealed



40 feet by 20 feet

Built in Oct. 1991. All these tanks used to be underground in building 28. Site air + outside tanks scheduled to be removed.

Building 28

Gabrielle Norlin
2.11.92

Waste oil from experimental oils in 55 gal drums or pallets and pumped into waste oil 10,000 gal. tank (cooked & pumped).

① soluable
② hydraulic
③ sludge
④ soluable

Enta Oil Process Continued

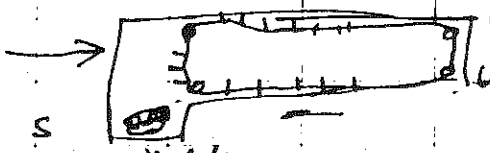
④ after cooking (@ 3 days) the extra oil water decanted and oil pumped to battery is stored in a 5,000 gal. steel tank & then filtered. When oil field to be reused, have a ⊕ on car bottom & scrubber. Scrubber/filter water goes back to ~~test~~ batch

Gabrielle Norby 3.11.92

tank & then WW treat.

Building 64 WW Treatment

① process H_2O ⇒ w/out oil.
all water run offs.
① goes to wet well inlet.
② goes thru bar screen (glows come outside) to
③ goes to another wet well
④ thru 4 pumps
⑤ thru 2 API separators under gr.



chain rotates ⇒ removes solids and oil
sludge pumps remove sludge to cyclone & auger ~~⇒ water~~ solids removed, ~~dumpster~~ & put into bindy 22 roll off box. ~~goes to Granger~~. Its decanted in 22, water to tank, solids to Granger.

Ⓓ

Oil to underground holding tank. It's decanted. Water thru system again. Oil hauled out by City Environmental, Detroit. Water from chain discharged.

Rosann Moore - Sr. Env. Eng.
Kurt Blizzard
Building 22
V-8 service products
V-6 manufact.
~~Engine~~ engine remanufact.
support activities

V-8 manufacture stopped in April 1991

Gabrielle Nordin
2.11.92

Ⓐ this oil is pumped when no longer good to 28 for treatment

- filter coolant or machining
- machine is ~~returned~~ recycled.
- Machining residue comes out.
- It put into a gondola.
- wet sole block flooring.

Ⓐ Cam shaft etching. Residue from etching (zinc & nickel) is cleaned out 4 per year approx.
4 drums per year.

Ⓑ filter coolant/hydraulic from drip pans removed by vac.
overflow to trenches & to
[illegible] room

Ⓒ used filter paper from some coolant machines goes to Roll off area (Sludge Dr.)
↳ dirt w/ cast iron castings?
↳ any liquids are poured off dumpster w/ [illegible] and sent back to 28.

Gabrielle Nordin
2.11.92

Ⓑ

~~box~~ ⑨
Paint spray booth ⇒ ① Waste thinner 4 drums/yr
② waste paint.
heads – waste thinner 4 drums/yr.
blocks – waste paint 3 drums

sludge
waste paint heads –
blocks –

waste to waste paint filters from mask washing
this area paints only heads & blocks for V-6. Waste paint sludge to paint sludge area for whole plant

Waste thinner to bay waste storage area.

Waste dust from filters on the V8 water outlet surface paint. 1 drum per year.

Gabrielle Norris
2.11.92

adhesive waste - D001 flammable liquid. V8 Water pump mach.

or

scrap chips from dry machining go to 20 cu. yard dumpsters out by scrap yard ⇒ contain. see next pg

engine rebuilding

this just started ⇒ 1991

Plant
① should have filters at some point
② have adhesive waste ⇒ like loctite
③ wash oil w/ lead collation
④ ~~shop~~ not Inert ~~bag house~~ dust collation - not analyzed from engine rebuilding
⑤ asbestos containing gaskets dry removed; wet removed and that sludge from the process ~~on~~ onto floor

Gabrielle Norris 2.11.92

(11)

waste 111TC A
waste hydraulic oil - Non Ht.
waste acetone D001
pump & valve repair

waste paint thinner from misc. painting operations throughout facility.

V6 assembly → only waste is adhesive liners.

found contamination in soil under scrap metal bins. liquid used to go to drain which went to UST. ~~which~~ now liquid goes to UST and then pumped to building 23 for oil treatment.

10 bins approx 20 x 20 feet.

(12)

approx 15 feet deep.

wash rack tank → Building 64 tank 6 area. from engine cell testing. ~~10,000~~ 1,000 gall. Pumped via vac truck to Build 128 tank. about 500 gal once every 3 months.

2:00 Met with Chuck Castle

(A) gas tank assembly → soldering + welding wastes in buildings 38, 26

~~dust~~ prep from gas tank manufact → lead blasting dust from cleaning ~~collects~~ tanks collects dust.

(B) 27B → 3M wastewaste and Gabrielle Nalis 2.11.92

(13)

Other adhesives from molding hoods → press inner & outer panels, used to glue them together.

Building 78 + 77

O Rapid Reinforced Reaction Injection Molding

① Waste paint thinner

② Waste paint sludge

③ polyol and isocyanate

④ water to ~~28~~ ~~oil~~ 69 room

⑤ water w/ poly/iso → goes out via vac truck to Envirite ~~Oil~~ Environ, Detroit.

⑥ Solid ~~tuff~~ debris in trenches drummed, placed in the haz waste storage area. Sent out non-haz or haz depending on composition to Petrochem (Haz); ~~Cobe Enviro (Non-haz)~~.

Gabrielle Berlin 2.11.92

(14)

approximately 100 Everclean parts cleaners, prior had Safety Klean until 85. Prior drummed & shipped to licensed TSD.

This process started in 78. Prior used chrome plating of metal to manufacture bumpers. Located in building 78.

1st building built in approximately 1904. for Oldsmobile. During WW II the facility made shells & guns. ~~for~~

methalene chloride

⑦ Waste ~~H2O~~ for parts cleaning & pumps. To ~~haz waste~~ SAA & haz waste area to Petro Chem

some sewers do go to city. are trying to seperate.

Gabrielle Berlin 2.11.92

(15)

Waste polysalt from lines ⇒ into drum;
~~storage~~ into haz waste storage
to Petrochm its non-haz.

in paint storage room - 1.5T Gallon
drum pt. thinner
1 200 gall
Concrete tank pt. thinner
stored in haz, waste area
then off site.

wash hampers & water goes to
69 28 oil room for treatment

Water tanks under paint spray
booth sent down. ~~to area~~
~~thru filter paper and remove~~
~~paint waste. Get waste paint~~
~~sludge~~ Add flocculants to paint
water waste to precipitate sludge
Gabrielle Kerlin 2.11.92

(16)

out. Water is re-used until it
can't be and its sent to building
69
~~28~~. ~~Water~~ Precipitated water sent
thru filter. Water re-used. Paint Sludge
generated. Paint sludge to 20 cu.
yard dumpster. then to granger.
Non-Haz

washers for gas tank assembly R
After blasting tanks are washed.
Water sent to build. 69.
welded by pinching seam between
2 copper wheels & sending current
thru it.
are liquid solder or now part of tank
and only waste
is empty jar.

Concluded at 5:15

Gabrielle Kerlin
2.11.92

(17)

2.12.92

Leroy Vahovic
Kurt Blizzard
J. Norris
P. Lynch

Sunny, windy, cold (16°F)

Haz. waste storage area ⇒ epoxy floor. Drains to N.E. corner + then to 1,000 gal. UST. Only rain water in this tank. No releases.

Building here pre 1980. Remains ⇒ Drog, etc. 1984.

Central tank farm to be used = 10,000 gal. waste paint from fascia paint.

10,000 waste gas ~~to~~ tank.
10,000 waste oil

(18)

those are used for secondary containment only.

Truck load area ⇒ 9,000 gal. UST epoxy coated.

fascia paint ⇒ ~~waste~~ add chemical to paint water, run thru filter + get solid waste. On Fridy system will drain water booth + clean out bottom too.

Paint roll off sludge dumpster outside has been in same general area at least since 1980. Prior it all went out as waste water.

6 foot red waste paint thinner solvent drum booth that

Gabrielle Rader 2.12.92

shovels squeegees etc are dipped in + cleaned.

Inside fascia paint mix room (Build #1) is a 3,000 gal steel waste paint thinner tank. Surrounded by 4 foot steel berm. This been in use 9 months. Near gate to dump. Emptied by [illegible] via vac tanker & transports to petro chem, Detroit

Custom.

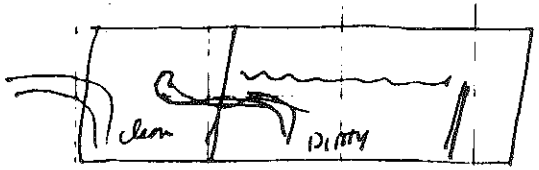
PCB transformer is scheduled to go thru on site PCB removal thru ENCR.

PCB trans. will have oil removed

fill cars w/ min. of fluid to get them to delivery point; oil, gas, etc.

Gabrielle Nolin
2-12-92

Building 90 fluid fill Oil & Water Sep. on assembly line. Trenches on assembly are sprayed with water to clean them. This accumulates in the separator ~~tank~~ tank.



When water so dirty its drained. Used to go to tank 65 in Building 34 Tank farm. tank pulled in 1990. Was ~~shipped~~ shipped out via bulk tank 2008; 2018. Now goes to building 28 solvable water & is treated & sent off site to depending on fluid point.

Since 1982. Prior it was

Gabrielle Nolin 2-12-92

Only in trenches & sucked up out of trenches.

Also have 1001 adhesive (Bad words) waste that's leaves about inch on the bottom & medium that solidifys & can't be used.

300 gal.
Waste oil & brake fluid from lines. Take car off line after fail QC. drain fluids. Vac truck picks it + takes to building 28.

Building 150 → Auto final Repair building touch up Paint ~~paints~~ on assembled autos. Generate paint sludge. Goes to Roll off box in alley to landfill non haz. paint sludge. Paint thinner is drummed & taken to Haz.

Gabrielle Norris
2-12-92

Waste Storage Area

Returned to Conference Room at 10:55 met Gary Borzyak.

N Expressway, residential, Chamber of Commerce
S RR; Board of Walnut Lights, River, Residential, Park
E Scott Park, River, Southern Ave warehouse, residential/commercial
W residential

Submitted a list of questions to Mr Blizzard to be answered within 2 weeks.

Informed GMC it would request a copy of the report from Region 5.

Concluded at 12:00 pm.

Gabrielle Norris
2-12-92

ATTACHMENT D

AIR OPERATING PERMITS

CURRENT ACTIVE AIR PERMITS
BOC-Lansing Plant I
PERMITS TO INSTALL

BLDG	BAY	PERMIT NUMBER	PERMIT STATUS	PROCESS	PERMIT SPECIFICALLY COVERS	
21	18-19 /B-C	304-77A	I	GM-20 WHEEL PAINTING	16 ft paint spray booth, 182 ft infra-red oven, DuPont Hi-Solids Wheel enamel.	REMOVED Revoked 10-9-89
27A-2,3	many	57-83A	I	PAINT SPRAY BOOTHS	The SMC Production Prime Painting Operations. Includes front end sheet metal, J-car hoods, and service parts priming. Utilizing the VIC, Akzo, and Inmont paints respectively.	(1) VOIDED 5-31-9
27A-3	15-17 /C-D	223-82	I	PAINT SPRAY BOOTH	(1) 25ft and a Two-section (both 16ft) PSB's for SMC Bumper Filler painting. Paint change from PPG DURETHANE 101 to PPG HI-SOLIDS ELASTOMER ENAMEL (no reducer)	(2) VOIDED 5-31-9
27B	5-C	395-87A	I	WELDER	Install a second mig weld station for N-car hoods.	(3)

CURRENT ACTIVE AIR PERMITS
BOC-Lansing Plant 1
PERMITS TO INSTALL

BLDG	BAY	PERMIT NUMBER	PERMIT STATUS	PROCESS	PERMIT SPECIFICALLY COVERS	
32-2	G-9/10	638-87	I	Paint spray booth	(1) Binks dry filter type paint spraybooth to be used for miscellaneous maintenance and non-production painting operations for Lansing Car Assembly - Chassis Plant.	(4)
34	6-9A	278-79A	I	PAINT SPRAY BOOTH	The Experimental RRIM Clamp, ovens, and booth and also the use of the PSB on the midnight shift by the Fab South Maintenance Group.	(5)
37A &37	many	760-81B	I	FASCIA PAINTING FACILITY	The installation of automatic electrostatic paint spray guns in the clear coat Tu-Tone /repair PSB. Also, updates permit to DuPont basecoat paints, and a change to a new DuPont clear coat.	(6) VOIDED 760-81C NOW 760-81
37A &37	many	760-81C 760-81D	I	FASCIA PAINTING FACILITY	The extension of the fascia tu-tone oven to accomodate an increase of tu-tone production. Due to changes in the painting procedures, the increase of emissions does not exceed current permit limits.	(7) NOW 760-81D
39	5-A	166-84C	I	PAINT SPRAY BOOTH	The V8 Engine Paint Spray Booth.	(8) VOIDED 1-24-91
45-2	C-2	673-87	I	Strip tanks	Install (2) methylene chloride strip tanks for use in the new Bldg 45 SMC mix room operations.	(9) VOIDED 1/8-91
49 yard	westside	495-87	I	Solid waste shredder and dustcollector	Install (1) Torit-Jet Model 1390 baghouse dustcollector to serve the Saturn scrap shredder and associated conveyors.	(10) INACTIVE OUT OF SERVICE
64-3	1-2/C-D	819-88	I	PAINT SPRAY BOOTHS	The (2) new spraybooth/oven combination booth ('SPOVENS'), and one small parts oven.	(11)
75A &90	41-A &6-B	858-84A	I	WELDER	(1) automatic and (1) repair welder (Exhaust pipes - 90-1 6-B) and (1) automatic and (1) repair welder (Exhaust pipes - 75A-1 41-A)	(12) VOIDED 1-26-9
73 77-2	MANY	657-81A	I	RRIM Claaps and Prime Painting	The Production RRIM Operations, including the claaps and the prime painting. Paints: PPG HAP 9470 ~~and PPG HSP 9445~~.	(13)

CURRENT ACTIVE AIR PERMITS
BOC-Lansing Plant 1
PERMITS TO OPERATE

	BLDG	BAY	PERMIT NUMBER	PERMIT STATUS	PROCESS	PERMIT SPECIFICALLY COVERS	
	148	south end	83-77	O	KOLENE SCRUBBER & BAGHOUSE	(1) Kolene process salt bath furnace & (1) Standard-Havens #21 Baghouse Dust collector.	OUT OF SERV (14)
•	150	A/AA 2-11	69-84	O	150 PAINT REPAIR FACILITIES	Prep Enclosure, Prime Oven (I.R.), Sanding Enclosure, Color Spraybooth, Demask Enclosure, Color Oven, Polish Booth & old major repair booth. DuPont BC/CC enamels, reducers, primer, and catalyst.	(15)
•	21,77	many	171-80A	O	WELDERS	(4) Seam welders, (1) ring welder, (2) solders, (1) washer for assembling "N" Car gas tanks. This also covers the processes covered by 171-81, except for "E" tanks, which were removed.	(16)
•	22	4-A	534-85	O	CAMSHAFT ETCH PROCESS	Camshaft etch machine with washer, spray rinse, phosphoric acid dip tank, spray rinse, and blow off.	(17)
•	22	23-25 /A-D	877-78	O	DUST COLLECTORS	(2) American Air Filter Co. Rotoclone DC's & (2) AAF Co. Pulse Jet baghouses from the cylinder head and bearing cap lines.	(18)
•	22 & 33	D-16, B-5	994-85	O	PAINT SPRAY BOOTHS	Double, 15 ft sections, sidedraft, water wash PSB for V-6 engine blocks (Bldg 33), and a 25ft downdraft, water wash PSB for V-6 engine cylinder heads (Bldg 22). AKZO Coatings 4ALK-41733	(19)
	27A &37	5-C &15-H	141-68	O	PAINT SPRAY BOOTHS	18 FT Bumper Filler Off-Line Repair (27A-3 5-C). (This permit used to include the 12ft Hood and Fender Off-line repair PSB in 37, 15-H.)	(20) VOIDED 5-31-8
	33	14/B-C	909-80	O	TIN PLATER	"OMI" Machine for Tin Plating Pistons	(21) VOIDED 1-24-9
	34-1	11/A-B	335-76	O	STRIP TANK	Methylene Chloride strip tank (36 gal/day)	(22) VOIDED 8-31-8
•	35	A-1	99-87	O	PAINT SPRAY BOOTH	A 13ft sidedraft, water-wash paint spray booth for maintenance and non-production operations.	(23)
•	36	10-12 /D	151-86	O	CONNECTING ROD HEATING UNIT	Change to using B6-860 as a rust preventive on machined connecting rods. The rods are heated to insert the bushings, and this heated B6-860 emits VOC's.	(24)
	36	B-B	21-81	O	RTV GASKET APPLICATOR	The 'Robotics' V8 Engine Valve Cover RTV Gasket Appilcator machine, using GE Silicone RTV Adhesive Sealant 1678LV	(25) VOIDED 1-24-9
	36	many	981-85	O	ENGINE TEST STAND FACILITIES	20 engine hot test stands (natural gas), 5 verifier test stands (natural gas) (bays 13-18 F,G,H), and 4 engine durability test stands (gasoline) (bays 1-B,C,D).	(26)

CURRENT ACTIVE AIR PERMITS
BOC-Lansing Plant 1
PERMITS TO OPERATE

	BLDG	BAY	PERMIT NUMBER	PERMIT STATUS	PROCESS	PERMIT SPECIFICALLY COVERS	
	37	10-11 /A-B	176-80	O	WELDER	(1) Anderson Oil Pan Welder	REMOVED
	38-1	many	524-82	O	WELDERS	(11) Fuel Tank Assembly Welders. Covers both the 38-1 North (P-Car) line and the 38-1 South line.	(27)
	38-1	10-11 /A-C	53-83	O	SOLDER FIXTURES	(2) Fuel Tank Assembly soldering fixtures	(27)
	38-2	15-17 /B-C	278-81	O	FUEL TANK ASSEMBLY	(7) Seam welders, (1) Tack welder, (1) Ring welder, (1) Baffle and Neck welder	(27)
	38-2	6-7/B	521-86	O	GAS TANK ASSEMBLY	(1) Tube solder and (1) seam welder for the "P" car fuel tank assembly (Auxiliary operations).	(27)
	38-2	6-9/C	522-86	O	GAS TANK ASSEMBLY	(1) Ring welder, (1) tack welder, (2) seam welders, (1) baffle welder, for the "B" Wagon gas tank assembly operations.	(27)
	40-1	16-C	334-76	O	DEGREASER	(1) DETREX Model #VS-1 degreaser using heated 1,1,1 trichloroethane solvent. (Methyl chloroform)	(28) VOIDED 6-8-91
	90-2	12-13 /A	305-77	O	PAINT SPRAY BOOTH	Instrument Panel (steering column) painting processes - 24ft two-section PSB and 75ft IR Oven in Bldg 90-2 12#13 A, and 59ft booth 117ft IR oven in Bldg 75A-2 22/24 A.	(29) VOIDED R to VOID 6-26-91

1989 - CURRENT AIR PERMITS

NO	BLDG	BAY	PERMIT NUMBER	PROCESS DESCRIPTION	COMMENTS
28	27B	13D	445-89	Prod. welder	
29	26-3	14C	654-89	MCL strip tank	
30	23	27D	739-89	Pump repair	
31	27	10B	527-89A	Hood assembly adhesives	
32	36/39	many	528-89	Engine adhesives	
33	32/90	many	531-89	Vehicle adhesives	
34	20	4F	157-90	Lead Melting	
35	28	--	220-90	Scrubber for WWT	
36	36	11C	224-90	Intake manifold	
37	66	4A	281-90	Foam packaging	
38	90	16D	290-90	TPO adhesives	
39	20	21B	291-90	Paint rub strips	
40	22	6E	426-90	V-8 water pumps	
41	40	17A	821-90	Lead melting	
42	22A	many	1091-90	Reman engines	
43	CTF 40	--	1274-90	Methanol and thinner storage tanks	
44	39	1A	376-91	Maintenance painting	
45	64TF 66TF	--	445-91	Alternate fuels	
46	22	18B	820-91	Cam knurling	

VOIDED AIR PERMITS
BOC-Lansing Plant 1

BLDG	BAY	PERMIT NUMBER	PROCESS	PERMIT SPECIFICALLY COVERS	REASONS FOR VOIDING PERMIT
150	AA	137-73	PAINT OVENS	(1) 67ft Electric Infra-red Prime Paint Repair Oven, (1) 160ft E.I.R. Color Paint Repair Oven	Equipment replaced by that now covered by permit #69-84.
150		140-68	PAINT SPRAY BOOTH	A Two-section (30ft and 40ft) PSB for touch-up paint repair work.	Equipment replaced by that on permit #69-84
150	5-D	224-76	PAINT SPRAY BOOTH	(1) 26ft dry filter Paint Spray Booth for major paint repair of complete automobiles.	Equipment was thought to be replaced by that on permit #69-84. Void verified by AQD 7/8/85.
150	6-D	410-73	PAINT SPRAY BOOTH	(1) 40ft water wash PSB for paint striping on complete automobiles.	Equipment replaced by that on permit #69-84.
150	6-B	558-86	PAINT SPRAY BOOTH	26'-0" long dry filter paint spray booth for major paint repair on complete automobiles. This was previously covered by permit #224-76, but was accidentally voided when permit #69-84 was issued.	This equipment is now covered by Permit #69-84 under the revised (1/14/88) supplements.
16B-1	12-C	656-81	WELDER	Diesel Engine Valve Cover Welders, (1) automatic, (1) manual backup	Equipment was relocated to Building 36. Notification made, no written response from AQD received.
21 & 77	many	171-80	GAS TANK ASSEMBLY OPERATIONS	"G" Car Tanks: (5) welders, (3) solders, (1) washer. "B/C" Car Tanks: (4) welders, (1) solder, (1) washer. "E" Car Tanks equipment.	"E" line equipment removed in 1985, new "N" line installed. Transferred coverage to permit #171-80A.
21 & 77	many	304-77	WHEEL PAINTING	16 ft Paint Spray Booth & 250 ft Infra-red Oven, 24 ft PSB & 186 ft Oven.	Bldg 77 booth & oven removed, Bldg 21 booth and oven using lower VOC coating. See permit #304-77A
26	21-A	444-78	PAINT SPRAY BOOTH	10 FT water base enamel PSB with dry filter media for painting the bottom half of gas tanks. SEIBERT OXIDERMO AWP 9091-1	This equipment has been removed. No current plans to reuse it.
27A-2,3	many	57-83	"BLACKBOOTH" SMC PAINT OPERATIONS	Two-section (12ft & 20ft) SMC Prime PSB, 177ft Prime Bake Conv.Oven, 40ft 2nd Prime PSB, 204ft IR Oven, (2) washers. SMC Primer GMO-9, GMO-2 Activator, urethane reducer, Black 4BMK-40431BR, Metaclean	Permit revision for materials in use.
27A-3	15-16 /D	279-79	PAINT SPRAY BOOTH	Change 12 ft extension of PSB 27A-3 16-D of permit #351-69 to a 16ft extension.	Equipment now covered by permit #223-82

VOIDED AIR PERMITS
BOC-Lansing Plant 1

BLDG	BAY	PERMIT NUMBER	PROCESS	PERMIT SPECIFICALLY COVERS	REASONS FOR VOIDING PERMIT
27A-3	A-5, 15-D	351-69	PAINT SPRAY BOOTH	40FT SMC Prime 2nd Coat PSB, 12ft extension to 27A-3 16-D PSB	40ft PSB now on permit #57-83, 12ft PSB ext. changed to 16ft and now on permit #223-82.
27B	17-A	395-87	MIG WELDER	(1) station to put (6) mig spot welds on the "N" Car Hood.	Permit was updated for the addition of another mig welder. See 395-87A.
27B-2	3-A	215-77	PAINT SPRAY BOOTH	12 ft extension to 20ft PSB covered by permit #182-71A	Equipment now covered by permit #57-83 (Also, a paint change to lower VOC's)
27B-2	1-A	216-77	OVEN	177ft Convection Oven for SMC Prime bake	Equipment now covered by permit #57-83 (Also a paint change to lower VOC's)
27D-2	5-A	207-76	PAINT SPRAY BOOTH	10ft dry filter PSB for SMC Hood and Fender Repair	This equipment has been removed.
34	7-10/ A-B	278-79	RRIM (BLDG 34)	RRIM pre-mix area, (1) 90 ton clamp, 24ft post cure oven, washer, 12 ft PSB, and 24ft color bake oven. Polyol, Isocyanate, Mold Release, Primer, and Topcoat.	
36	11-B	214-77	PAINT SPRAY BOOTH	12 FT PSB for painting diesel engines.	Equipment relocated to building 39 7-A. Now covered by permit #279-80.
36	6-E	656-81*	WELDER	Diesel Engine Valve Cover Welders, (1) automatic, (1) manual backup.	Both these machines have been removed for engine change-over.
37	21-E	794-87	Paint spray booth	(1) dry filter paint spray booth for painting miscellaneous maintenance and non-production items built in the Fab South WOR Construction Crib.	The painting operation was moved to the experimental RRIM booth on the midnight shift. See 278-79A.
37A &37	many	306-77	A & B/C HOOD AND FENDER PAINT PROCESSES	"A" Car hood and fender paint line, "B/C" Cars hood and fender paint line.	Equipment now covered by permit #306-77A
37A &37	many	306-77A	A & B/C HOOD AND FENDER PAINT PROCESSES	20ft extensions to the existing 40ft PSB's covered on permit #306-77.	This equipment has been removed.
37A &37	many	306-77B	B/C HOOD AND FENDER PAINT PROCESSES	Delete the "A" car hood and fender paint line from permit #306-77A	Project work deferred due to FACIA project. Permit #306-77A reactivated.

No. 3
1 9

VOIDED AIR PERMITS
BOC-Lansing Plant 1

BAY	PERMIT NUMBER	PROCESS	PERMIT SPECIFICALLY COVERS	REASONS FOR VOIDING PERMIT
&.. many	760-81	FASCIA (Original Plan)	(1) sanding booth, (1) color spraybooth, (1) bake oven. PPG DURETHANE 101, AMERCHEM 8089 REDUCER.	Project redesigned and now covered on permit #760-81A
&37 many	760-81A	FASCIA PAINTING FOR GM-20	The FASCIA Basecoat/Clearcoat Painting Facility: (3) water wash PSB's, (2) ovens, and a sanding booth. PPG BASE COAT, PPG CLEAR COAT Enamels.	Transferred coverage to permit #760-81B.
7-A, 6-A	166-84	ENGINE PAINTING FACILITIES	12 ft Diesel Engine PSB (39 7-A), Entire Gasoline Engine PSB & Flash-off (39 6-A), Both engine paints changed to Chemical Specialties Black High Solids Engine Enamel.	Paints changed to water-borne enamels. Equipment is now covered by permit #166-84A.
7-A, 6-A	166-84A	REVISE ENGINE PAINTING FACILITIES	Entire Gas Eng PSB & Flash-off (39 6-A), Also, the Diesel Engine PSB, Paint change to waterborne enamels: G.Eng to Seibert Oxidereo AWE-9352. D.Eng to Seibert Oxidereo AWE-8089.	12ft DEng PSB has been dismantled and removed. IR Oven added to GEng PSB, w/auto-elect sprayguns.
6-A	166-84B	PAINT SPRAY BOOTH	The two-section V-8 Gasoline Engine PSB, the addition of an infrared drying oven, and the reactivation of the booth's automatic, electrostatic spray guns. (since chng to wb paints, guns only auto)	Coverage transferred to #166-84C.
7-A	279-80	PAINT SPRAY BOOTH	12 ft Diesel Engine Paint Spray Booth	Equipment now covered by permit #166-84A
6-A	508-82	PAINT DRYING ENCLOSURE	Second (or southern) Gasoline Engine Paint Spray Booth and associated Flash-Off Enclosure.	Equipment is now covered by permit #166-84A
6-A	508-82A	PAINT CHANGE	Gasoline Engines paint change from Siebert Oxidereo AE8058 to Wyandotte 4AMX-40656A.	Equipment now covered by permit #166-84A
5-C	66-72	PAINT SPRAY BOOTH	First (or northern) 15 FT Gasoline Engine Paint Spray Booth	DNR says all this equipment is now covered by permit #166-81A.
1-C	182-71A	PAINT SPRAY BOOTH	20 FT PSB for SMC front end panels. Sherwin Williams "POLANE" polyurethane primer, INMONT primers, GROW thinners	Equipment now covered by permit #57-83 (Also, a paint change to lower VOC's)
6-C	333-76	DEGREASER	(1) DETREX Model #VS-1 degreaser using heated 1,1,1 trichloroethane solvent. (Methyl chloroform)	Equipment has been removed. Now using caustic cleaners.

LOCATION OF PLANT 1 AIR PERMITS